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WHAT TO TEACH,

AND

HOW TO TEACH IT:

SO THAT THE CHILD MAY BECOME A WISE AND GOOD MAN.

BY

HENRY MAYHEW.

PART I.—THE CULTIVATION OF THE INTELLECT.

"The great sources of wisdom are *experience and observation*. To open, and fix, the eyes upon what passes *without, and within us*, is the most fruitful study. *Books* are useful chiefly, as they help us to *interpret* what we see and experience. When they absorb men, as they sometimes do, and turn them *from the observation of Nature and Life*, they generate a *learned folly*; for which the *plain sense* of the illiterate could not be *exchanged but at great loss*.

"What we want is a race of teachers acquainted with the philosophy of the mind—gifted men and women who shall *respect human nature in the child*, and strive to touch and gently bring out its *best powers and sympathies*; and who shall devote themselves to this as the *great end of life*."—*Dr. Channing.*

LONDON:

WILLIAM SMITH, 113, FLEET-STREET.

1842.

ADVERTISEMENT.

THE following treatise is an attempt to deduce the *subject—means*—and *object* of Education, from the laws of the Mind. The author has considered Education rather as a science than an art; believing the philosophy of it to bear the same relation to Mental Philosophy, as the science of Agricultural Chemistry bears to that of Chemistry in general: and as Sir Humphrey Davy was enabled, by his application of the known chemical laws to the cultivation of the Earth, to lay down particular rules for the development and correction of the different properties of the Soil by the Farmer, so has the author endeavoured, by adapting the known laws of the Mind to the cultivation of the Intellect, to deduce certain principles for the encouragement and controul of the several faculties of the Pupil by the Tutor. These laws—when they appeared to him to be correct and sufficient—the author has derived from the Lectures of Dr. Brown, on the "Philosophy of the Human Mind;" when they seemed to be incorrect, he has, with all due deference, attempted to show and amend the error; and, when insufficient, he has, by the most careful analysis, endeavoured to supply the deficiency. The author has entered upon his task, earnestly soliciting that spirit, which is said by Bacon, in the prefatory aphorisms to his "Novum Organum Scientiarum," to be essential to him "who would come duly prepared to the business of interpretation." He has striven "neither to be a follower of novelty, custom, nor antiquity—nor to indulge himself in a liberty of contradicting—nor servilely to follow authority." He has sought "to be neither hasty in affirming, nor loose and sceptical in doubting; but to raise particulars to the places assigned them by their degrees of evidence and proof." He has endeavoured "not to judge of things by their uncommon nature, their difficulty, or their high character, but by their just weight and use." Of the style, it may be as well to add, that the author has cultivated the diffuse, as being the more perspicuous—rather than the concise, though this certainly would have been the more elegant. Indeed, he has continually sought, by the repetition or translation of the same idea into different terms, to submit the phrase he has in the first instance used to express it, to those mental tests, which alone can give the reader a notion of the exact sense intended to be conveyed—a course, which will doubtlessly be more acceptable to such persons as know, and are anxious to avoid the fallacies—than to such as have a taste and inclination for the graces—of language;—to the advocates for precision than to the admirers of prettiness—in a word, to the logician rather than to the "*litterateur*."

DECEMBER 10, 1841.

TO HIS BEST FRIEND

MARK LEMON,

THIS WORK IS INSCRIBED,

FROM A MINUTE KNOWLEDGE OF THE MAN,

WITH THE HEARTIEST AFFECTION AND ESTEEM,

BY

THE AUTHOR.

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WHAT TO TEACH,

AND

HOW TO TEACH IT:

SO THAT THE CHILD MAY BECOME A WISE AND GOOD MAN.

PART I.

THE CULTIVATION OF THE INTELLECT.

CHAPTER I.

THE FALLACY OF THE SUPPOSED CONNEXION BETWEEN READING AND WRITING, AND MORALITY AND INTELLIGENCE.

THE returns furnished by the governors of the different jails, respecting the number and characters of the several persons confined therein, afford an apt illustration of the grand benefits that are generally supposed to accrue from a knowledge of the arts of orthœpy and orthography. The prisoners are commonly divided into those who can, and those who cannot, read and write; and it certainly must be conceded to the advocates for the moral advantages arising from an acquaintance with the works of Dilworth and Carstairs, that among the residents at Horsemonger-lane, Bridewell, the Compter, or the Treadmill, the literati are in a highly complimentary minority. But (notwithstanding this assumed proof of the beneficial effects of reading and writing) still am I simple enough to believe that a man may be utterly ignorant even of the A B C, and yet be not given to cutting throats; and wholly unskilled in the art of penmanship, and still have no bias in favour of burglary. Nay, it is my deliberate opinion—mad as it may appear in these days of societies for the diffusion of horn books and propagation of primers—that Mavor is no preventive to murder, nor Vyse any corrective of vice. And I cannot, by any course of reasoning, bring myself to perceive, that an inability to read and write must be generally accompanied with a like inability to distinguish between right and wrong; as if the question of *meum* and *tuum* had more to do with Lindley Murray than Morals.*

Nor has a knowledge of reading and writing, it is commonly supposed, a less potent influence upon the head than on the heart. To be ignorant of it is, according to the general opinion, to be not only a knave, but a fool; whereas to know it is to become at once a savan and a saint. A man who can neither read nor write must—at least so run the notions of the world—have a strong prejudice in favour of silver spoons, and against syllogisms—a greater love of larceny than logic. "Disseminate Dilworth," say the Educationalists, "and every jail will shortly be converted into a gallery of practical science, and Botany Bay be changed to another Athens. Let but the blessings of the primer," they exclaim, "be known to every thief, and philosophy must instantly supersede the picking of pockets, and all budding Jack Sheppards ultimately expand into so many full-blown Socrates'." And yet, in the teeth of all this, I must confess it is my honest belief, that a man may be perfectly rational, and yet utterly illiterate; that he may have a good sound knowledge of the universe within and without him, and still have no knowledge even of the alpha-

* This, it may be said, is only a "*reductio ad absurdum*," not a disproof. It points out the ridiculousness, but does not show the falsity of the deduction; and new truths, it may be as correctly added, generally appear ridiculous because new, and contrary to our experience or prejudices. The logical error, however, lies in considering that as a cause which is merely a concomitant effect of a particular circumstance. That the majority of criminals are unable to read and write is a fact which cannot be disputed; but it is also a fact equally indisputable, that the majority of criminals belong to the poorer class of society: in which case it follows that the temptation, and consequently the tendency among the individuals of that class to commit crime would be greater, while their inability to obtain instruction in, and consequently their knowledge of, reading and writing, would be less than among those of the more wealthy, and therefore the less criminal class. Hence, if we assume any other circumstance which, like that of an acquaintance with the arts of orthœpy and orthography, is an evidence of the pecuniary means of the culprits—as, for instance, an indulgence in any of the more expensive articles of dress—and take that for our measure of the morals of the prisoners, we shall find quite as large an amount of crime to be connected with the want of the one, as with an ignorance of the other. Indeed, we might just as rationally assert, because *all* the persons who counterfeit signatures are acquainted with the art of penmanship, that therefore a knowledge of writing engenders forgery, as that, because the *majority* of thieves and housebreakers are unacquainted with that art, therefore an ignorance of it begets burglary.

bet; for I certainly have to find out the necessity of learning to spell in order to read the Book of Nature: nor can I discover (what appears to be so obvious to the generality of parents and tutors) that the study of the works of Mavor is an indispensable preliminary to the study of the works of God. Nay (wild even to absurdity as the notion may seem), I have no hesitation in affirming, and, to those who dare to think out of the fashion, I have no doubt of proving, that a knowledge of reading and writing, far from being the base, is rather the elaborate capital of the pillars of wisdom; and that, instead of tending to educe the powers of the young mind, it serves, like the bandages applied by old women to the infant's body, only to impede and cripple its natural vigour and development.

CHAPTER II.

WHAT IS READING AND WRITING, AND WHAT ARE THE ADVANTAGES LIKELY TO ACCRUE FROM A KNOWLEDGE THEREOF?

WRITING is the act of describing certain figures symbolical of the sounds used by Man, as signs to convey his sensations, thoughts, and emotions, to others; reading, the act of translating those figures into the sounds of which they are the symbols. What miracles are wrought in our simplest acts! How vulgar, and yet how marvellous, is writing! or "putting down words upon paper," as it is commonly called—words! which are without form and substance! impalpable as moonshine! thoughts wrapt in air! ethereal couriers from mind to mind! volatile as lightning! short-lived as an instant! and yet we transfix them, drag them from the air of which they are part, nail the very breath to paper, and render that which is by nature as transient as time, as permanent as space; giving figure to what the wildest imagination cannot conceive to be figured; sketching sound; making the voice visible, and the eye to hear. It is the distillation of thought! Even as we write our mind runs liquid through our pen; the very ink grows eloquent, discoursing like the waters of a brook as it flows along the page; the quill (the sage's tongue) speaks like a living thing, and the clear paper mirrors each thought, as it flits across our brain, as a lake reflects each cloud that traverses the sky. Consummate art! that can give mind to matter, sense to the insensate. The dull sheet lies before us, blank as an infant's brain! A few magic marks are made upon its surface, and, lo! it lives, it feels, it thinks! A human intellect speaks from out it; the mind is painted on it like a landscape; idea after idea glides pictured before our eyes; the diorama of thought—of thought, which (to use the words of D'Alembert) "sees so many things so distant, and yet cannot see itself which is so near."

Nor is the act of reading a whit less wonderful. We glance at a few fantastic figures, and the inmost recesses of another's soul are instantly revealed to us; the secret processes of his mind are laid bare to us, like so much clockwork: we see him think, and look, as it were, into his very conscience. We cast our eye along a series of grotesque cyphers, and lo! the absent are with us; the past becomes the present; the dead are brought to life. Space melts, and Time rolls backward: Death no longer kills. One word, and the gates of the grave are flung back, and the long-deceased start into life, as did Lazarus of old when Jesus spoke. See! here is what we call a book: what is it really—in itself—physically, what but a collection of sundry scraps of paper, tattooed with curious characters? Has it soul, voice, intellect, imagination? No! it is a dull lump of senseless matter—barren as so much granite—thoughtless as the rags from which it sprang. What is it mentally? What, when looked upon by those skilled in its magic mysteries? The works of William Shakspere! the heart's historian! nature's evangelist! It is the sacred urn treasuring that part of him which could never die—the mausoleum of his immortal mind. To lift back the cover, is as it were to roll the stone from before the sepulchre, and to see him rise again in all his native glory. These leaves are but the scented cerements embalming his most precious fancy—these characters but so many mystic symbols telling of his high nobility. Here is a page covered with strange cyphers (cyphers which are in themselves only little lines of ink), and yet which, contemplated by the mind, become a garden of most beauteous flowers, in which dwell fairies, honey fragrance, and all the rosy riches of luxurious imagination. Cast but the eye on this, and you shall think as he thought, feel as he felt, dream as he dreamt, two hundred years ago. His spirit shall be with yours, and yours with his, mingling like two rivers. You shall fly with him beyond all space, and look into the bright world of fancy; you shall see with him the springs and movements of the human heart, even as you have, by similar means, seen with Newton the springs and movements of the planets. And yet what is there to connect us living with him dead? What but these mystic characters, and that wonderful little orb the eye? These are the links which bind him to us—these the spells which can win him back to life and song, though the hand and all of him that penned them be crumbled into dust: nay, though part of that very dust be clinging, as if in fond remembrance, around the pages that it glorified.

"That system of perpetual transmigration, which was but a fable, as believed by Pythagoras, becomes reality," it has been happily remarked, "when applied to the soul and its feelings in connection with literature. This is indeed the true metempsychosis by which the poet and the sage spread their conceptions and emotions from breast to breast; and so may be said to extend their existence through an ever-changing immortality."* That strange illusion the mirror of ink, of which travellers in Egypt speak with so much wonder, and which, on being looked into, presents to the sight the apparition of whomso-

* Dr. Brown's Lectures.

ever the Magi may command, is no longer a juggle as shown in that most common, and yet most amazing of all arts, reading. There truly is the ink a magic mirror, in which we have but to look, not only to behold the form, but to hear the voice, nay, to imbibe the very passions of those whom the wizard writer would conjure to our view. In this the mother sees and listens to her absent child; in this, the lover gazes once more upon the darling features of her whom Fate has severed from his sight; in this, the lonely widow looks, and hears again the kindly counsellings of him whose voice the grave has hushed; and, poring into this, the student sits and communes with the glorious dead, while the long train of past events, in shadowy procession, sweep before his eyes.

Such is the nature—the extraordinary nature, of those ordinary arts, reading and writing; nor are the advantages accruing from a knowledge of them of a less eminent, or less surprising quality. These remain to be set forth. The principal, if not the sole benefit, arising from an acquaintance with those arts, consists in the removal of the obstructions which space and time present to the communication, *vivâ voce*, of our thoughts and feelings to others. Speech is not only transient, but limited in its influence. It is a necessary evil attendant upon oral intercourse, that those to whom we speak must be both co-existent and contiguous. By the introduction of literary communion that evil has been remedied; and we are now able, by reading or writing, to transfer our sensations, thoughts, and emotions, to others, or to have theirs transferred to us, though there be the distance of half the earth, or that more formidable barrier, the grave, existing between us. By the gift of speech, Man was eminently fitted to enjoy that social state which his philanthropy led him to desire; but, by the nature of that gift, not only was the *extent* of the society, but the *term* of the enjoyment of it, restricted to narrow limits. By the invention of the arts of reading and writing, these shackles have been cast off, and Man (no longer fettered in his desire for communion with his fellow man) has become, as has been beautifully said, "the citizen of every country, the contemporary of every age." By these simple, but glorious arts, the whole civilized globe has been drawn as it were into one family circle, and a companionship created between those even whom seas divide.

We hear much of the great benefits which our present facilities for local intercommunication have conferred upon mankind. Thus, indeed, has the distance which estranges man from man been abridged, and thus the whole human race have been made neighbours, if not kindred. By these means the blessings of each particular country have been rendered common to all, and the treasures of the most distant lands brought within the reach of the humblest individual in our own. Thus the person of our very pauper is clothed with cotton from the South; his morning meal cheered with tea from the East, sweetened with sugar from the West; while his winter's evenings are illumined with the combustion of the produce of the North. Such are the blessings of our improved means of intercommunication. Ships are fitted out, and the remotest corners of the earth explored, to add to the pleasures even of the poorest amongst us. But eminent as are these benefits, how insignificant do they appear in contrast with those accruing from the arts which we at present contemplate. The same facilities as the steam-engine and the railroad have afforded to the interchange of commodities, have been given by reading and writing to the interchange of thought. *Steam only abridges space, whereas literature annihilates it altogether.* By the former we can cross the Atlantic (great marvel!) in a fortnight; by the latter, we can listen to the philanthropic eloquence of the wise and good Channing (greater marvel still!) without crossing it at all. What, though by the power of the one we can traverse the earth in half the time, can we not, by the magic of the other, sail round the world with Cook, and yet not stir from our seat; or follow Parry to the icy regions of the Pole, while sitting by our fire-side; or visit with Park the burning plains of Africa, while our breath freezes on the window-panes at home? What, though the former has brought within the reach of even the humblest amongst us the produce of the richest and most distant quarters of the globe, has not the latter (as it has been truly observed) "given to all who will faithfully use it, the society, the spiritual presence of the greatest and best of our race? No matter how poor I am" (says he, whose writings are in themselves a brilliant instance of the blessings of this noble art),* "no matter though the prosperous of my own time will not enter my obscure dwelling, if the sacred writers will come in and take up their abode with me, if Milton will cross my threshold to sing to me of Paradise, and Shakspere to open to me the worlds of imagination and the workings of the human heart, and Franklin to enrich me with his practical wisdom, I shall not pine for intellectual companionship, and I may become a cultivated man, though excluded from what is called 'the best society' of the place where I reside."

Another great benefit arising from literary communication is, that the mind has, by these means, become, like our manufactures, capable of exportation. We wrap up our thoughts in a sheet of paper, and transmit them, like a bale of goods, to some far distant land. Our ships are laden not only with the bounty of our soil and the produce of our factories, but with the workings of our brains and the outpourings of our hearts. Scarce a vessel quits our shores that has not its cargo of hopes and fears; of love, sympathy, and counsel; of golden dreams and penniless despair, as well as iron, cotton, and other articles of commerce. Nay, by the happy invention of literature, the very mind has become an article of commerce; and intellect as much a matter of merchandize as cotton and iron themselves.

* Dr. Channing on Self Culture.

Beautiful and noble thoughts are to be had for money now-a-days, as well as food and raiment. Indeed, for a few pence we may become the possessors of the practical philosophy of Franklin, the gorgeous fancy of Shakspere, and the silver-toned philanthropy of Channing. Yea, for the matter of a penny a week, we may have our choice of a variety of large sheets, rich in the wonders of the heavens and the earth, and studded with the reflections and actions of the best and wisest of mankind.

But, perhaps, the grandest of all the benefits resulting from a knowledge of reading and writing, lies in the influence which those arts give us over time. By their means, the dark doom of oblivion seems to be annulled, and the changeful and evanescent course of nature rendered immutable and indestructible as truth. Thus, thought (the most volatile of all things in this most volatile world!) has become fixed as fate; and thus that strange ubiquitous little point of existence which we call the present; that breadthless line, dividing what has been from what will be; that unsubstantial keystone to the broad arch of time; that ever-shifting centre of eternity, which no sooner is than it was, has been rescued from the clutches of the past. By these simple arts we are enabled not only to dam up, as it were, the current of events, but to drive back the tide of that mighty principle whose very essence is progression. By literature, that which *was*—even as by science, that which *will be—is*. Nature stops. There is no past. The thoughts which were present to the mind of Plato two thousand years ago, are now, and so long as the art endures, shall ever be present to the minds of the existing generation. "It is this permanent transmission of thought which" (it has been truly said*) "constitutes the noblest of all the benefits conferred by literary art, giving as it does to each individual the collective powers and wisdom of his species—or, rather, giving to every one who desires it, the rich inheritance of the accumulated acquisitions of all the multitudes who, like himself, have, in every preceding age, inquired, meditated, and patiently discovered; or who, by the happy inspiration of genius, have found truths which they scarcely sought, and penetrated with the rapidity of a single glance, those depths of nature which the weak steps and the dim torchlight of generation after generation had vainly laboured to explore."* Nor is this all. It is this permanent transmission of thought which gives us the power of extending our existence, as it were, through all the ages which have preceded us, and enjoying the communion of the noblest minds with which those ages were adorned. "We are often in the habit," says Seneca, in his Treatise on the Shortness of Life, "of complaining that our parents, and all the circumstances of our birth, are not of our choice, but of our fortune. We have it in our power, however, to be born as we please in this second birth of genius. Of the illustrious minds that have preceded us, we have only to determine to whom we wish to be allied, and we are already adopted, not to the inheritance of his mere name, but to the nobler inheritance of his wisdom and his genius."

These then are the attributes and accidents of reading and writing. We have seen that essentially they are each not only a means, like speech, for communicating our thoughts and feelings to others, or for the communication of others' thoughts and feelings to us; but also a means by which, unlike speech, those thoughts and feelings are capable of being transmitted to any distance in space, or preserved for any period in time.* Writing always regards the future; reading respects the past; whereas speaking is restricted in its operations to the present. They are these prospective and retrospective properties of reading and writing, which, as we have perceived, give rise to the chief benefits resulting from a knowledge of those arts, and which constitute the main distinction between them and speaking. *All that is communicable by literary means admits, therefore, of being as well, if not more forcibly conveyed, vivâ voce, provided the parties in communion be not far removed from each other.* Proximity, it should be remembered, is all that is essential in this respect for the prosecution of oral intercourse; and when that condition can be complied with, it surely must be absurdly idle to have recourse to a means of communication which is of use only in precisely opposite circumstances.

CHAPTER III.

THE RELATION BETWEEN READING AND WRITING, AND EDUCATION.

It now remains for us to inquire into the connexion between these arts and education; but in order to be able to ascertain with precision the nature and extent of their relation, it is necessary that we should first obtain some definite notion respecting the meaning of that important word; or, what is the same thing, that we should, before entering on our inquiry, discover the several particular ideas that are included under that general term. And here I am compelled to abandon for a while the apparent course of my argument.

CHAPTER IV.

WHAT IS THE MEANING OF THE TERM EDUCATION?

The term Education is compounded chiefly of two Latin words, *ducere*, to draw, and *e*, out; and, consequently (if uncorrupted), should, in its signification, refer to some such process. It still retains

* Dr. Brown's Lectures.

* But we must not allow the wonders wrought by these arts to warp our judgments, or to lead us to believe them, because a more extensive, to be also a more *impressive* means of communication. Literature is to oratory what the mummy is to the man. There is the same substance, the same form in both. In the one, however, it is imperishable, but lifeless; in the other, animated, but ephemeral.

its original meaning, and accordingly conveys the idea of drawing out, extending or expanding some quality or thing expressed by the substantive which may succeed it. Thus, when we speak of the education of Man, we allude simply to the act of educing or expanding his nature.* To educate a man is, therefore, literally, to bring out his manliness; to develope and strengthen, not any one attribute or accident of his constitution, but all those peculiar powers and qualities which make him, or rather distinguish him as Man. Now the peculiar faculties or distinctive properties of human nature, are evidently its intellectual and moral capacities. Man is possessed of, and characterised by, not only understanding, but conscience. He can feel the rectitude and criminality of actions, as well as perceive the agreements and differences of things; and it is, consequently, to the cultivation of those two specific qualities or characteristics of human nature, that the education of Man should always have reference.†

By the majority of persons, however, the phrase is understood as signifying the evolution of only one of these faculties. Education is commonly conceived to consist of, and the labours of the greater number of our instructors are accordingly directed to, solely the intellectualisation of the subject. While, to many people, the term has not apparently even this limited construction; for (judging by the process adopted in several of our schools, and especially in those which are esteemed as among the best), it would seem that Education is thought, both by the tutors and parents of the scholars there, to lie almost entirely in what may be called the *latinisation* of the being. Indeed, I am not acquainted with any system, whether intended or not to intellectualise, that does positively any thing else than parrotise the pupil. All our modes of instruction are framed apparently on the notion that the memory and the intellect are one and the same principle; when, perhaps, there are not two more distinct faculties appertaining to the mind. Remembrance is only the blind mill horse that sets the mechanism of thought in motion. Intelligence, the engine that divides, sifts, and prepares the mental nutriment. Learning seems to be to the pedagogues of the present day, synonymous with wisdom. Grammar, one would imagine to constitute, in their opinion, the chief ingredient of genius, and a knowledge of the dead languages, the grand aim and end of existence; while to their classic eyes, Latin appears to be the true *summum bonum*, and Greek, the real *το καλον* of life.

But even among the more intellectual of the class, Education seems, from what the pupils are taught, to be generally considered to have little or no reference to the moralisation of the being. We are to make a boy wiser, is the common notion of the object of instruction; but not better than he would otherwise become. There are many professed schools for the head, but none that I know for the heart. The classics, according to the popular opinion, are *essential;* morality is only *incidental* to education. The New Testament, it is true, is studied in many classical establishments; but studied—for the Greek! The doctrines of Christianity (that vast system of ethics, which required a special life in order to be inculcated), are certainly taught in most infant academies; but taught—by a catechism! In fine, the main defect, nay, evil, of our present mode of education, lies in the fact that the chief object and tendency of all our instruction, is the formation of good scholars, rather than good men. "The exaltation of talent and learning over virtue and religion," as Channing has truly remarked, "is the great curse of the age."

The prime source of this error is to me a profound and popular ignorance, as to the nature and use of the intellect. Upon a sound knowledge of the functions and purport of the intellectual principle, together with its relation to the moral one, a correct system of mental cultivation can alone be founded; for in Education, as in Chemistry, it is evident that we can operate with precision only by knowing the qualities and laws of the subjects of our operations. To acquire such knowledge, is, therefore, the first, and not the least important object, which, in an inquiry like the present, should engage our attention.

* I have thought it best in the above definition to adhere to the vulgar, rather than the classically correct signification of the term. Education means, strictly, the fact of the nature *having been* educed; eduction, the fact of its *being* educed; and educence, the act of *educing* it. Thus it is the eduction of the pupil's nature which constitutes the education of the pupil, and this is the result of the educence of the master.

† There is, however, besides the intellectualisation and moralisation of the pupil, or rearing him as an intellectual and moral being, one other branch of education; which, for the sake of the clear development of the above ideas, I have omitted in this description, and that is, if I may be allowed the phrase, the prudentialisation of the pupil, or rearing him as a prudent being—meaning thereby, the inculcation of habits of industry and frugality in his mind, so that he may be induced not only to labour for his own subsistence, but to lay by a portion of the produce or wages of that labour as capital, or a source of profit for the future. That this is a branch of education on which the happiness, not only of the being himself, but of society at large, is greatly dependent, it surely does not require a moment's reflection to perceive, and that it is utterly neglected in all our schools of the present day, is a fact equally evident. Prudence is, as it were, the foundation-stone of all civilisation. It is the intellect of the individual applied to the production of his own happiness; whereas morality is the intellect of the individual applied to the production of the happiness of his fellow-creatures. This subject requires a separate consideration, forming, as it does, a separate branch of education. That consideration I hope to be able at some future time to devote to it.

CHAPTER V.

THE USE OF THE INTELLECT.

MAN has but to look into the construction of his own beautiful emotions to discover the object of his great mission here. He has but to observe, that from the nature of his sympathy he can be truly happy only when those around him are so, and that when they are miserable he cannot help * participating in the misery; that there is something within him which forces him to love, or, find pleasure in

* Provided, of course, there be no opposite feeling present in the mind.

the society not only of those who have befriended him, but even of those who have befriended others; *and that, on the other hand, he cannot avoid being angered against those who wantonly wound him, and also finely indignant even when another is the object of the wrong*; *that when he does a good, no matter how slight it be, to a fellow-creature*, he has a voice within him *ever approving of the act*; and that when he inflicts an injury, let him be convinced of the injury, and *of his intention to inflict it*, and he shall feel a pain and a disquietude which, either in the reproaches of his own bosom, or in the ghastly spectres which his frighted conscience shall raise up, shall haunt him to his dying hour; that after the gratification of his animal appetites, perhaps the strongest of all his selfish principles of action, is the desire he feels for the approbation of others; and that virtue, or the promotion of the happiness of his fellow-men, is that to which every human being is bound to give his highest approbation; and, moreover, that there is not within him an emotion which would lead to the infliction of pain upon another, that has not been made a source of pain to himself; nor one that tends to benefit his kind with which a feeling of delight in his own breast is not as intimately connected—Man, I say, has but to perceive these facts to become convinced that the grand object of his creation was the increase of the enjoyment of his fellow-men; and consequently, to feel that all other principles superadded to his moral one, or that which would induce him to strive to augment the general happiness, must be secondary, or rather, must have been designed as instrumental to the attainment of that great and glorious end.

But this is only an argument *à priori*. Let us endeavour to discover, *à posteriori*, the use of the intellect. Now, surely, the sole test for the utility of a thing, is the happiness that it directly or indirectly is capable of affording. A thing is of use only in proportion as it is adapted to become an instrument of good. But I have shown in the preceding paragraph that, from the constitution of our principal feelings or emotions, the greatest happiness or good that we can experience must ever result from the promotion of the happiness of those around us. Consequently, it must, I think, be evident to all, that the intellectual principle, or that which teaches us the relations of things and events, and so enables us to perceive the means of attaining any particular end, can be useful to the possessor and society at large, only according as it is made the servant of the moral propensity. And hence it follows, that if this propensity be not properly developed and strengthened, previous to the cultivation of the understanding, in the being to be educated, and so brought to be the constant guide and pilot, as it were, of his intellect, the principle, which, if rightly directed, may become the greatest of all created things—that prescient reason which distinguishes man from the brute, and allies him to the God—must almost inevitably be converted into the attribute of the demon; even as the sword, which, in the hand of the patriot, is the arm only of defence, may, is the very emblem of justice itself, becomes, when possessed by the robber or the invader, the instrument of plunder and destruction.

"Compared with the other denizens of the earth," says Sir John Herschell in his admirable discourse preliminary to the Study of Natural Philosophy, "Man seems, if we regard only his physical constitution, in almost every respect their inferior. No other animal passes so large a portion of his early existence in a state of such absolute helplessness, or falls in old age into such protracted and lamentable imbecility. To no other warm-blooded animal has Nature denied the indispensable covering, without which the vicissitudes of a temperate, and the rigours of a cold climate, are equally insupportable; and to scarcely any has she been so sparing in external weapons, whether for attack or defence. Destitute alike of speed to avoid, and of arms to repel the aggressions of his voracious foes, tenderly susceptible of atmospheric influences, and unfitted for the coarse aliments which the earth affords spontaneously, during, at least, two thirds of the year, even in temperate countries, Man, if abandoned to mere instinct, would be, of all creatures, the most destitute and miserable." But beautifully and forcibly as this passage places before us the ills which would accrue to human nature, deprived of all intellectual power, yet Man, being in such a state, though unintellectual, still moral, and though lacking his reason, still possessing his generous sympathy, he would thus become a martyr to miseries and desires infinitely more keen than any which could arise from his mere animal wants. Bitter as might then be the pain of his hunger, acute as might be the agony of the cold, intense as might be the dread of his voracious foes, yet these would be trifling pangs in contrast with the anguish which would rend his bosom on beholding his friends, his parents, and his children, all similarly situated, and more than all the torment consequent on feeling the desire to relieve them, coupled with the consciousness of his inablility to do so.

And yet there is a state of human nature conceivable which would be the source of even blacker horrors than the foregone. *Man, deprived of his intellect, but still retaining his sympathy, might be the most miserable and destitute of animals; but Man, possessed of intelligence and yet lacking philanthropy, would become the most savage and cunning of all the brute creation.* The very helplessness of his early life, which is now to the mother only an additional incentive to her love and her care, would then be to her—destitute of all affection for her kind—but a stronger stimulus to her hate and her neglect. The wants of his childhood, which, according to the present constitution of Man, give a fresh heart and soul to the labour of the father, and the gratification of which wants is per-

haps the greatest luxury his toil affords, would then be regarded by him but as so many new burthens added to his already too heavy load of life, and the provision for them viewed only as the sustenance of an existence no more to him than that of the parasite fattening upon the ruin of his own. While Man, generally, being devoid of all sympathy with his fellow man, and the happiness of the one consequently directly opposed to, rather than dependent upon, that of the other, would no longer welcome his neighbour as a friend or a companion, but shun or repel him as a rival or a foe; and moreover, knowing no law but the dictates of his own animal desires, he could not fail to adopt every artifice which his intelligence could devise, to put an end to a life which interfered so materially with the pleasures of his own. *Thus Man's existence would become one round of continual enmity and terror, and Man himself a very tiger in ferocity, but more than a tiger in skill, to execute the deeds that ferocity might suggest.*

Such are the uses and relations of our intellectual and moral functions. We have seen that Man, if deprived of his intellect, would be the most miserable and destitute; if of his sympathy, the most savage and cunning of all the brute creation; consequently we may infer that, according as *solely* the one or the other of these powers is expanded in us, so shall we approximate in our nature either to the instinct of the brute or to the artifice of the demon, and that only when they are *both* developed in an equal degree, can Man be said to be educated really as *Man*. We should remember that the intellect simply *executes;* it is either the selfish or the moral propensity that *designs*. The intellectual principle enables us to perceive *the means of attaining* any particular object; it is the selfish or else the moral principle in us that causes us originally to *desire* that object. The two latter principles are the springs, the former is merely the instrument of all human action. They are masters, whereas the intellect is but the servant of the will; and hence it is evident that *in proportion as the one or the other of these two predominant principles—as either the selfish or the moral disposition is educed in Man, and thus made the chief director and stimulus of the intellectual power within him, so will the cultivation of that power be the source of happiness or misery to himself and others.*

Our intellect, then, we may conclude, is of real use only so far as it is made subservient to our moral disposition; and this, it may be inferred, was the main object in bestowing it. Man has grand duties to fulfil, and consequently requires grand means for the fulfilment of them. It is not so much in his moral nature, although this is the chief ground of his responsibility, that he differs from the brute creation, for we have but to look into the beauties of natural history to find that, even there, morality is not wholly unknown. The little societies of the bees, where each labours instinctly for the benefit of the others, the sympathy displayed by them and many other animals, when an injury is done to any of their tribe, and the fine indignation which leads to their resentment of it upon the head of the injurer, all these show a moral disposition and a fellow feeling as beautiful and as strong, perhaps, as that which reigns in the breast of Man. It is futile to tell us that the principle in animals differs from that in us, being with them only an instinct; for he who says this proves that he has studied but little the character of his own emotions. What, indeed, are all moral feelings *but* instincts—feelings impelling us to act in conformity with the happiness of those around us? Is not our desire to relieve the pain of others as much an appetite, when developed, as our desire for food? Is our sympathy the effect of cold calculating judgment? Our love, our anger, are not these frequently rather the very antagonists than the consequences of reason? Morality, in truth, is nothing more than the result of an instinct implanted in us, as well as the brutes, which show that they possess it, so as to make us desire the happiness of our fellow creatures. But to Man is given not only the desire, but an intellect capable of discovering the most efficient means by which that desire may be gratified, and the general happiness accordingly promoted.

To promote this happines is, then, the chief aim and end of the intellectual principle, and a great end it assuredly is. How necessary, then, is the cultivation of a principle like this, which, if it be rightly directed, may lead to the grand results which evidently must have been the principal object of the Creator in bestowing it. But it should be constantly borne in mind that the cultivation of the intellect will be comparatively useless, nay, perhaps worse, unless it be preceded by the development of that most eminent principle of all, which should ever be its guide and director.

To the eduction or education of the latter, or moral capacity in Man, I purpose devoting a separate and entire treatise. It is to the expansion of the former, or intellectual capacity, that I intend at present to address myself; because education, as I said before, is generally thought to signify solely the intellectualisation of the being. I must, however, beg of the reader to understand that I consider the means which I shall now proceed to point out for the development of the intellect, would be totally ineffectual, nay, probably an utter curse to society, unless the understanding be previously taught to be ever directed by sound moral principle.

CHAPTER VI.

WHAT CONSTITUTES THE INTELLECTUALISATION OF A BEING?

I NOW proceed to explain, first, what, in my opinion, constitutes the intellectualisation of a being; and, secondly, how that intellectualisation is to be effected.

By the intellectualisation of a being, I mean the

eduction and expansion of his intellect, together with the inculcation of a habit of intelligence in that being. But, what is the meaning of a habit of intelligence, and what are the peculiar attributes and functions of the intellect; or, in other words, what is the precise signification of, and distinction between, the two terms, intelligence and intellect? Let us begin with the consideration of the former.

CHAPTER VII.

THE OBJECTS OF INTELLIGENCE.

THE word intelligence is compounded of two other words, *inter*, signifying between, and *legens*, gathering; and consequently refers to the act of gathering something that exists between two or more objects. Now, the only thing which can exist between two or more objects, is an agreement or difference among them in some circumstance or quality. They are these agreements and differences which constitute what are called the relations of things; and it is therefore to the act of gathering these relations or agreements and differences among objects, that the term intelligence, in its proper signification, always has reference. Hence, when we speak of the intelligence displayed in a particular observation, we allude simply to the perception it evinces respecting the circumstances or qualities in which several things or events agree or differ one with another; and it is solely the habit or tendency in a certain person to perceive and gather these relative circumstances or qualities, among objects in general, that marks or distinguishes what is called a habit of intelligence in that person. The term intelligence, therefore, signifies the act of perceiving or gathering the relations, or points of agreement and difference between the various things and events existing and occurring around us; while the phrase, a habit of intelligence, refers to that peculiar mode of thought which leads a man to be continually seeking and collecting those relations.

Intelligence, then, it is evident, is the source of all science, the fountain of all knowledge. It is intelligence that gives to nature her universal harmony—intelligence that bedecks her with her brightest beauty. Without intelligence, all would be obscurity and confusion. Our senses furnish us only with the raw material of thought; it is intelligence that spins and weaves it into the garb of wisdom. They only extract, as it were, the rude and shapeless substance from the quarry; it is intelligence that fashions it into symmetry and grace —intelligence that endows it with the lovely form of truth. All is disorder in the mind until, like a tidy housewife, intelligence assigns to everything its proper place, classing those things which are similar, and separating those which differ in their nature; and thus evoking, God-like, a world of light and harmony out of darkness and of chaos. It is this intelligence or perception of the agreements and differences of things, which gives rise to philosophy, poetry, or wit, according to the class of objects upon which it is brought to operate; and it is the habit or tendency in certain men to perceive the agreements and differences among particular classes of objects which distinguishes those men as philosophers, poets, or wits. Thus, philosophy perceives and gathers the relations of things and events in either external or internal nature, according as it is of either a physical or metaphysical character. In its physical capacity, it discovers the agreements between objects and effects in the world without us, and so shows things in appearance especially different, to be in reality essentially similar. The falling of a feather to the earth, and the retention of the planets in their orbits—the sparks emitted from the back of a cat, and the lightning flashing from the clouds—the water that we drink, and the gases by the intense light of whose combustion we discover the animalculæ contained therein—the diamond that we wear for ornament, and the charcoal that we burn for fuel—the processes of burning, of rusting, and of breathing*—these, though seemingly opposite as the poles, physical philosophy, or the intelligence of man, directed to the various substances and circumstances without him, has shown to be in nature intimately connected, nay, perfectly identical; while the same intelligence directed to the various thoughts and feelings within us, or, metaphysical philosophy, has revealed to us equal, if not greater, wonders. This teaches us that the figure we see and the figure we feel, though apparently one and the same, are in reality distinct and different in form; it teaches us, moreover, that all vision is an art—nay, as Dean Swift has humourously described it, "that it is the art of seeing those things that are invisible;" it shows us, also, that the beauty which seems to beam through the face of nature, like the spirit of the benevolence which created it—that the light which appears to bathe the world, as it were, with a golden dew, and which, in the varied hues of the fields, looks like a rainbow scattered over the earth as a token of grace and amity to Man—that the fragrance which seems to stream from the flowers "like a tribute of incense poured forth by Nature to the bountiful being who is adorning her"—that the melody which appears to gush like sweet-voiced gratitude from the little winged spirits of the trees—nay, that the very order, unity, and harmony which seems to pervade the whole universe, are but our own sensations and emotions diffused over material creation; and that as to the savage, the figure which is merely the representation of his own person in the mirror, appears to be an actual living being, so to the uninitiated in mental science, the beauty and harmony of nature, which are but the reflections of their own thoughts and feeling, seem to have a real and independent existence. Poetry, however, unlike either physical

* See the "Treatise on the Objects, Advantages, and Pleasures of Science," published by the Society for the Diffusion of Useful Knowledge.

or metaphysical philosophy, traces not the relations of animate or inanimate existence apart from each other, but, like the flowers it loves, it forms rather the graceful link that joins the two together. Thus, the poet discovers the analogies between his feelings and the aspect of external nature, and thus, by the heaven-born fire of his genius, Prometheus-like, gives life and mind to earth. In poetry, we perceive everywhere what Akenside calls

> "The charm
> That searchless Nature o'er the sense of man
> Diffuses, to behold in lifeless things,
> The inexpressive semblance of himself,
> Of thought and passion."

The fields smile—the forest frowns—the brooks murmur—the roses blush—

> "Jocund day
> Stands tiptoe on the misty mountain tops;'

Mercy

> "Droppeth, like the gentle rain from heaven,
> Upon the place beneath,"

and "rich honesty dwells like a miser in a poor house, as your pearl in your foul oyster." And thus, by a double transformation, in poetry, thought, and passion, are given to things insensible, and form and colour, and substance, added to every feeling of the soul.* Poetry, however, deals only with the beautiful, while its more sprightly sister, wit, traces the same relations, but among meaner and more distant objects. Thus wit delights in connecting such common things as appear opposed, and disconnecting such as seem conjoined in nature.† Accordingly, in the "School for Scandal," Sir Peter Teazle is made to say, "'Tis now six months since Lady Teazle made me the *happiest of men*, and I have been *the most miserable dog ever since*. We tifted a little going to church, and fairly quarrelled before the bells had done ringing. I was more than once nearly choked with *gall* during the *honeymoon*, and had *lost all comfort in life* before my friends had done *wishing me joy*."

Such, then, are the nature and effects of intelligence. We have seen that, generally, it is the act of perceiving and gathering the relations, or points of agreement and difference, among the various objects in material or mental existence, and that, specially, it gives rise to philosophy, physical or metaphysical, according as the things classified belong only to external, or only to internal, nature; and, when to both, to poetry or wit, according as the subjects of the relations are either of a beautiful or ordinary and apparently opposite character.

* *Vide* Brown's "Philosophy of the Human Mind."

† This is the process of humour rather than wit. I have given it the latter term because all wit must be humorous, it being simply the application of the humour to some object that constitutes the wit. In humour there is only one ludicrous relation, whereas in wit there are always two. Thus the reply of the gentleman who, on being asked what wine he liked best, answered "that which he did not pay for," was a humorous one; whereas the retort of the other gentleman who, on being told that he could not say "boh!" to a goose, said "boh!" to the person who told him so, was a witty one. In the former reply there is but one remote relation, namely, that between the answer given and the answer expected; while in the latter there are two, viz., the one between the answer given and the answer expected, and the other in the application of that answer to the person who made the remark which elicited it.

We have now to consider the meaning of the term Intellect, and so to trace the difference between it and Intelligence. This term, as, indeed, is evident, has the same root as that. The word Intellect is simply the past participle, Intelligence the present, of the Latin verb *intelligo*. The one consequently differs from the other, as an active differs from a passive event. Intelligence, as I have explained, refers to the *act* of gathering; Intellect to the *fact* of having gathered certain relations: the one indicates a particular process *going on* in the mind, the other expresses the *result* of that process. Thus, when we speak of a man of intelligence, we allude to some one who is continually observing and collecting the agreements and differences among the various objects in nature, whereas by the phrase, a man of intellect, we refer to some one who has a number of those agreements and differences already stored in his mind.* A man of intellect is a learned man; a man of intelligence is a sagacious one: the former is what is called a person of *ac*quirements; the latter, a person of *in*quiry. Accordingly, we speak of the man of intelligence and the man of intellect as two different individuals, alluding in the first case to one who has a habit of seeking and observing the relations of things, and in the second to one who has a variety of such relations husbanded in his brain. Thus, a knowledge of the several arts and sciences marks, in the highest sense of the term, the man of intellect, and the application of that knowledge to some new object, the man of intelligence.

The intellectualisation of a being, then, includes two processes. We are to make him not only intellectual, but intelligent; we are to give him not only a perception of the agreements and differences among the various substances and circumstances in nature, but also to cherish in him a spirit of inquiry—to encourage in the pupil such a habit of observing the relations of things,

* The term Intellect has, however, in common parlance, another and a very different meaning, being frequently used to express the *cause* rather than the *effect* of intelligence; as, when we speak of the cultivation of *the* intellect. In this sense it signifies the mental principle which perceives rather than the perception, which is the *result* of the exercise of that principle. This, though far from correct, is still a very common extension of the original meaning of terms of this class; for there is a greater latitude of signification among the nouns expressive of action than among any other class of terms in the English language; the same word frequently standing not only for the act itself, but for the power which induces as well as the fact which results fom that act. Thus, the term perception, which signifies literally the fact of having perceived a certain object, is used not only in that sense, but also to express both the power and the act of perceiving it. Accordingly we speak of a man as deficient in perception, *i. e.* in the *power* of perceiving—of the operation of the mind in perception, *i. e.* in the *act* of perceiving—and of the accuracy of a certain perception, *i. e.* of the *fact* perceived. By a similar extension, the term imagination, which signifies literally the *fact* of having imagined a certain circumstance, is made to stand for the mental principle which imagined it. And so the term Intelligence, which, as I have shown above, means strictly, the *act* of perceiving certain relations, is frequently used as synonymous with news or information, or, in other words, to signify *a fact* which has been newly perceived. I have thought it better, however, in speaking of the mental principle which perceives these relations, to adopt the common term, Intellect, both in the title-page and body of this treatise, rather than coin one like Intellectivity, which, though it might have been more correct, could not have been so readily understood by the general reader.

that every object may be to him, in after years, the suggestor of new and beautiful thoughts.

Hence we have two grand subjects for inquiry, namely, first, concerning what things and events we are to give the pupil a perception of the agreements and differences—upon what matters he is to be made intellectual; and, secondly, by what means we are to encourage in him the habit of observing those agreements and differences—how he is to be rendered intelligent. These two questions, it is evident, embrace the whole art of education, or rather that part of it, intellectualisation, which is commonly supposed to constitute the whole. To know accurately *what* to teach, and also *how* to teach it, is clearly to know all concerning teaching. The subject and mode of instruction are, then, the next points which should engage our attention. Let us commence with the consideration of the subject of instruction: let us begin by inquiring what is to be taught—upon what matters the pupil is to be intellectualised.

CHAPTER VIII.

WHAT TO TEACH?

THE answer to this question is to be found only in the circumstances in which man is placed. All intellect or knowledge is valuable only as a means of promoting our happiness. Happiness is as truly an effect, and consequently as dependent on some preceding circumstance, as any other event in nature: it follows, therefore, that a knowledge of the relation of the circumstances in which man is placed is necessary for the promotion of his happiness.

There are only three kinds of circumstances or events of which man can take cognizance—sensations, thoughts, and emotions. Our sensations are those events or changes of feeling produced in us by the action of something which is external and independent of us. A knowledge of the laws which regulate the succession of this class of circumstances constitutes what is called Natural Philosophy. Our thoughts are those states of consciousness which are suggested by our sensations, and which succeed one another in the mind without any external action. A knowledge of the laws which regulate the succession of this class of circumstances constitutes what is called Mental Philosophy. Our emotions are those vivid feelings of delight and displeasure which follow the contemplation of some act of our own or others. A knowledge of the laws which regulate the succession of this class of circumstances constitutes what is called Moral Philosophy.* According as we become more conversant with the laws which regulate the first, or Natural Philosophy, so do we become more sensually happy; according as we become more intimate with those which regulate the second, or Mental Philosophy, so do we become more intellectually happy: and, according as we become more familiar with the laws which regulate the third, or Moral Philosophy, so do we become more morally happy. A knowledge of the laws of *matter* enables us to promote the *physical* good; of the laws of the *mind*, the *intellectual* good; of the laws of the *heart*, the *moral* good, both of ourselves and our fellow-creatures. According as we grow conversant with the various substances and circumstances existing and occurring in the material universe, and thereby come to understand their relations to each other, as well as to our sensations, so we are enabled to give a particular direction to the succession of events in the world without us, and so either to alleviate the pains or to augment the pleasures of ourselves and others. Even so in the mental universe. According as we get acquainted with the laws of suggestion within us, and thus learn not only the links which bind thought to thought, but also the ties which connect them with our feelings of beauty, so are we enabled to induce pleasant, or to divert unpleasant trains of ideas; and so either to soothe the grief or to promote the delight both of ourselves and those around us. And thus it is in the Moral Universe. According as we study the connexions between our various acts and emotions, and thus become convinced of the supreme felicity which invariably attends the contemplation of any benefit conferred disinterestedly upon another, and the bitter disquietude which as invariably accompanies the remembrance of any wanton injury, so are we the more anxious to encourage the good, and to restrain the evil passions of our nature, and so the more ready to promote the happiness of our fellow-creatures, and thereby, in the highest degree, of ourselves.

An acquaintance with the laws of the Material, Mental, and Moral Universe is, then, all that constitutes real knowledge, and all that leads directly to happiness. If a man could become *perfectly* acquainted with each of these branches of knowledge, it is clear that he would be all-wise and all-good; but perfection belongs to One alone. Man is improveable and not perfectible in his nature, and to effect such improvement in him by teaching him all that is known, and implanting in him such a spirit of inquiry as shall make him seek to increase the knowledge respecting the constitution, order, and harmony of the beautiful world without him, and also of the still more beautiful world of thought and feeling within him, is, or rather should be, the great aim and end of all education.

I shall now proceed to point out, more specially, the benefits resulting from a knowledge of each of the above classes of science. I do this because, in

* I have deemed it better, for the clearer description of the objects and limits of the different branches of Philosophy, to confine the subject of the emotions *wholly* to Moral Philosophy, notwithstanding some of them—such as cheerfulness, melancholy, beauty, sublimity, ludicrousness, &c.—*do not* essentially involve any moral feeling. But as these form so small a portion of our mental constitution, compared with those emotions which *do* involve a moral feeling, and which emotions are necessarily the only subjects of which moral philosophy can take cognizance, I have judged it better to include the whole under this head, rather than, by making any trivial exceptions, run the risk of confusing the reader.

almost all of our schools of the present day, the pupils are instructed in every thing *except these;* and I am therefore the more anxious to impress upon the reader the simple fact that, until these subjects are generally taught, education must continue to be, as in too many instances it is *now*, a curse, rather than a blessing, not only to the individuals educated, but also to society at large.

CHAPTER IX.

THE NECESSITY FOR TEACHING NATURAL PHILOSOPHY.

To begin with that which relates to the sensual happiness of Man.

Natural Philosophy is that branch of knowledge which results from the observation, comparison, and consequent classification of the phenomena, or appearances of things and events, in the world without us. It has for its subject, therefore, everything which comes under the notice of our perceptive faculties, and thus is peculiarly the science of the senses.* Its chief object is, as I have shown, the increase of man's physical enjoyment. Man is endowed with a constitution susceptible of pain and pleasure, and he is placed in a world of circumstances capable of exciting in him the one, as well as the other feeling. But he is endowed also with the capacity of perceiving the relations of those circumstances, and therefore with the means of becoming the ruler of the elements around him, rather than remaining their miserable dependant. It is the exercise of this faculty, and the consequent adaptation of the various events in nature to his own use and benefit, which forms the grand distinction not only between man and the brute, but also between savage and civilized life. And it is the more general exercise of this faculty in our own country, and the consequent advancement of physical science among us, that has given to England her proud prëeminence over all other civilized nations in manufactures and in commerce. It is this which has made her the dispenser, not only of the bounties of her soil and her arts, among the inhabitants of the most distant countries, but also of those of other lands, among the humblest of her own. It is this which has made the cottage of our poorest peasant the receptacle of luxuries from every quarter of the globe; and it is this which has clothed the person of our very pauper with the products of some of our most ingenious and beautiful arts. "A man would be laughed at," says Mandeville, in his fable of the bees, "that should discover luxury in the plain dress of a poor creature that walks along in a thick parish coat and a coarse shirt underneath it; and yet what a number of people—how many different trades—and what a variety of skill and tools must be employed, to have the most ordinary Yorkshire cloth! What depth of thought and ingenuity—what toil and labour—and what length of time must it have cost before a man could have learnt, from a *seed*, to raise and prepare so useful a product as linen! Must not that society be vainly curious among whom this admirable commodity, after it is made, shall not be thought fit to be used even by the poorest of all, before it is brought to a perfect whiteness, which is not to be done but with the assistance of all the elements, joined to a world of industry and patience.* Can we reflect," he continues, "not only on the cost laid out in this luxurious invention, but likewise on the little time the whiteness of it continues (of which part of its beauty consists) so that every six or seven days, at farthest, it wants cleaning, and consequently is, while it lasts, a continual charge to the wearer—can we, I say, reflect on all this, and not think it an extravagant piece of nicety, that even those who receive alms of the parish should not only have whole garments made of this operose manufacture, but likewise that, as soon as they are soiled, in order to restore them to their pristine purity, we should make use of one of the most judicious as well as difficult compositions that chemistry can boast of; with which, dissolved in water, by the help of fire, the most detersive and yet innocent lixivium is prepared, that human industry or ingenuity has been able to invent."

But the increase of man's sensual happiness is not the only, nor yet, great as it is, the greatest benefit conferred by natural science. It is valuable, not so much for the physical luxuries it bestows, as for the refined taste, the intellectual gratification that it affords to the student. It is to be prized for the aid that it lends our manufactures; it is to be revered for the sincere and profound love of truth that it inculcates. Ask any natural philosopher why he devotes himself to his most fascinating pursuit, or why it has so many fascinations for him? He will tell you that it is not only for the power that it gives him of increasing the physical pleasures of his kind, but also for the high happiness—the vast elevation of thought that it confers—the magnificent wonders—the glorious truths that it reveals—and, above all, for the demonstration that it affords him of the design of the all-good God in the creation of the universe, the development of His marvellous benevolence—and, moreover, for the desire that it incites within him, by continually contemplating His goodness, and feeling the intense delight that there is in the contemplation of it; to dispense that kindness and mercy unto others, which He has so lavishly dispensed to him. He loves science because he loves truth, and Him who is the fountain of all truth.

There is a very apt and beautiful illustration of this influence of natural science, given by Dr.

* Thus, to take the more simple examples, Optics is the science of vision—Acoustics the science of hearing—Dynamics the science of muscular exertion, or power—and so forth.

* The mode of bleaching in Mandeville's time, all the elements being the ancient four—earth, air, fire, and water—not the modern fifty-six. What a vast improvement has been effected in this process since that period—and that simply by the more rapid *decomposition* of one of the pseudo *elements!*

Chalmers, in his observations upon the use of the telescope and microscope. He says, speaking of the two instruments, "The one led me to see a system in every star; the other leads me to see a world in every atom. The one taught me that this mighty globe, with the whole burden of its people and its countries, is but a grain of sand on the high field of immensity; the other teaches me that every grain of sand may harbour within it the tribes and families of a busy population. The one told me of the insignificance of the world I tread upon, the other redeems it from all its insignificance; for it tells me that in the leaves of every forest, and in the flowers of every garden, and in the waters of every rivulet, there are worlds teeming with life, and numberless as are the glories of the firmament. The one has suggested to me that beyond and above all that is visible to man, there may be fields of creation which sweep immeasurably along, and carry the impress of the Almighty's hand to the remotest scenes of the universe; the other suggests to me, that within and beneath all that minuteness which the aided eye of man has been able to explore, there may yet be a region of invisibles; and that, could we draw aside the mysterious curtain that veils it from our senses, we might there see a theatre of as many wonders as Astronomy has unfolded—an universe within the compass of a point so small as to elude all the powers of the microscope, but where the wonder-working God finds room for the exercise of all his attributes, where he can raise another mechanism of worlds, and fill and animate them with all the evidences of his glory."

Such, then, are the advantages arising from the study and cultivation of natural philosophy. We have seen that a knowledge of the laws of external nature, and the consequent adaptation of them to his use and enjoyment, constitutes the main distinction between man and brute, as well as between savage and civilized humanity; that an acquaintance with those laws is not only necessary for the promotion of the physical pleasures of mankind, but that it is desirable for the refined taste and intellectual gratification it gives to the student; for the deep and devout love of truth that it inculcates, and, above all, for the higher and more expanded notion it inspires concerning the nature and attributes of the Creator.

I conclude, therefore, that Natural Philosophy should be taught—that in a proper system of education, the pupil should be intellectualised—that is, made to perceive the agreements and differences concerning the various substances and circumstances in the world without him.

CHAPTER X.

THE NECESSITY FOR TEACHING MENTAL PHILOSOPHY.

We now come to the consideration of that class of knowledge which relates to the intellectual happiness of Man.

Mental Philosophy is that branch of science which results from the observation, comparison, and consequent classification of the various thoughts and feelings within us. It deals with the events or changes of state in the mind, as Natural Philosophy deals with the events or changes of state in matter. It classes together those which are similar, sets forth the qualities in which they differ from the rest, and points out the states which precede and follow them as their causes and effects; and, by these simple means, it builds up a science as different from the vague subtleties and profound quibbles which made up the whole of the Mental Philosophy of former years, as the vain speculations and researches of the alchymist are different from the Chemistry of the present day—a science which is the sublimest of all sciences, because it is the science of the sublimest of all created things—the last crowning work—the exquisite consummation of Omnipotence, the human mind, and a philosophy which is the highest of all philosophies, because it is the philosophy which teaches us the highest of all knowledge—*the knowledge of ourselves*. Man is naturally the subject, not only of matter, but of mind. He is placed in a world made up of both; and to him is given a constitution susceptible of pain and pleasure, from the operations of the one as well as the other. And—as in the material universe, he becomes the ruler rather remaining, than the dependent of the elements by which he is surrounded, according as he grows acquainted with the nature and laws of the substances without him—likewise in the mental universe, according as he learns the character and order of succession of the various ideas and feelings within him, so does he become the governor, instead of remaining, as otherwise he must, the slave of his every thought and passion.

But a knowledge of the relations of our thoughts and feelings is valuable, not only for the power it gives us over ourselves, but also for the influence it affords us over others. There is not a single communication that can be made from man to man that is not a metaphysical experiment. Certain feelings can be produced at will in the mind of another, only by a knowledge of the laws which regulate the succession of these feelings. The dramatist—the orator—the poet—the wit—the politician—the man of the world—the fop—are all practical metaphysicians—mental experimentalists—operators upon mind; and he who has the best acquaintance with the principles which regulate the suggestion of the thoughts and feelings he would inspire, must, it is evident, be the most successful in his art. Had there been no fixed relations by which one idea or emotion is bound or gives rise to another; or had "the immortal bard" been less conversant with these relations, it is clear there could have been no Shakspere, or, rather, none of those glorious and truthful evidences of his knowledge of them, which constitute him Shakspere to us. If there had been no discoverable

mode of inducing our pity, our mirth, our indignation, or our melancholy, could he have made us weep as we have over Ophelia, laugh at Falstaff, grow resentful towards Iago, and pensive with Jacques? No; it was his deep insight into the spring and movements of the mechanism of our minds that gave him his mighty power over us. We laugh—we cry—we philosophise—we speculate—according as he wills it; in his own words, "he fools us to the top of our bent;" or, to adopt the beautiful figure he has used in Hamlet, "He knew our stops, and sounded us from our lowest note to the top of our compass, playing upon us as easily as on a pipe."

But a knowledge of mental philosophy—of the relations which our ideas and feelings bear to each other, is of importance, not only for the power it gives us over the thoughts and passions of ourselves, and of our fellow-creatures, but also as bestowing upon us the means of promoting their, as well as our own, intellectual happiness. All intellectual happiness depends upon a feeling of beauty; or, rather, a feeling of beauty and intellectual happiness are one and the same thing: for beauty is simply the vivid delight which results from intellect—that is, from the perception of the agreements and differences of things.

There are three kinds of beauty or species of delight producible in the mind; namely, sensual, intellectual, and moral beauty. Sensual beauty appertains to such natural objects as, from the harmonious arrangement of their parts, produce a delightful effect upon our senses; as the arrangement of the colours of the rainbow, the lines in symmetry, and the notes in music.* Intellectual beauty relates either to those artificial objects which agree with our ideas of nature and excellence,† as acting, painting, music, sculpture, and fashion; or to those connexions of thoughts which appear to us to agree one with another—as the metaphors and similes in poetry, the arguments in ratiocination, and the incongruous congruities of wit. Moral beauty belongs to those actions which agree with our notions of goodness—as acts of benevolence, heroism, devotion, &c.* In addition to these, many objects, which are, or would have been naturally indifferent, become beautiful to us by the mere accident of being associated with others, which have been to us, from either of the above causes, a source of delight, as our homes, which are connected with the love and care of our parents, our native land, the gifts of friends and lovers, the birth-places and property of the illustrious, &c.†

The grand source of beauty lies, then, in intellect; that is, in the perception of the agreements of things. Objects, however, which are sensually

* Of sensual beauty, there are three principal species—beauty of colour, beauty of form, and beauty of sound. The constituents of the first species of sensual beauty, or beauty of colour, are chromatic harmony and variety; or, what is the same thing, chromatic agreement and difference. Consequently, the rainbow is one of the most beautiful coloured objects, because it exhibits at once the greatest harmony, combined with the greatest variety of colours. The constituents of the second species of sensual beauty, or beauty of form, are local harmony, or order and variety; or, what is the same thing, local agreement and difference. Consequently, the curve is the most beautiful of figures; because it combines the greatest order with the greatest variety in its form. And the constituents of the third species of sensual beauty, or beauty of sound, are acoustic harmony and variety, or, what is the same thing, acoustic agreement and difference. Consequently, what is called the common chord or harmonic triad in music, is the most beautiful of sounds, because it combines the greatest harmony with the greatest variety of tones.

† But this, it will doubtlesaly be said, is a *petitio principii*, or assumption of the point to be proved; for to say that a thing is intellectually beautiful, because it agrees with our notions of excellence, is apparently to say that it is beautiful because it *is* beautiful. But the term excellence is here used, not as synonymous with the highest beauty, but with the highest art, *i. e.* the perfect conformity of a work with those principles which have been established for the production of beauty in the particular branch of art to which the work belongs. Thus a subject which contains no natural beauty, may be intellectually beautiful, because it is felt to be in accordance either with nature or the principles of art. To the vulgar, the first is the chief, if not the sole element, of intellectual beauty; an accurate imitation of nature being with them the only criterion of excellence, because they have no other standard whereby to judge. To the connoisseur, however, a strict adherence to the principles of art constitutes the main element of this species of beauty; nature being frequently as utterly disregarded by the latter class of persons, as it is exclusively attended to by the former. They are these principles or rules established for the production of beauty in art, which form what I have termed the standard of excellence. They will be found, on examination, to be based upon an analysis and minute perception of the elements of natural or sensual beauty, and are consequently unknown to the vulgar or unobservant. By the uncultivated taste, therefore, only the more obvious points of natural beauty are appreciated; and, consequently, we find a jingling melody in music, a gaudy arrangement of colours in painting, and a sudden transition in the tones of the voice in acting, constituting the chief points of beauty to the unreflecting. Of the influence of fashion in giving an artificial beauty to those things which agree with our notions of excellence, it is surely unnecessary to cite any instance as a proof.

* Thus an act may be morally beautiful to one man and morally disgusting to another, not because they each have a different moral constitution (for all men are formed fundamentally alike in this respect, and cannot do otherwise than approve of an act which appears to them to be a benefit or good done for the mere sake of benefitting), but because they each have a different perception of the tendency of the act in question, the one regarding it as *beneficial*, while the other looks upon it as *prejudicial* to the interest, either of the individual who is the object of it, or of society at large. And thus it is that different nations have different moral codes, and that an act which is considered as a crime in one country is viewed as a virtue in another. Accordingly, it has been very truly said, that "the permission of theft in Sparta may seem to us, with our pacific habits and security of police, to exhibit a gross moral deformity; but there can be no doubt that theft, as mere theft, or, in other words, as a mere production of a certain quantity of evil to an individual, if it had never been considered in relation to a political object, would, in Sparta also, have excited the same disapprobation as with us. As a mode of inuring to habits of vigilance a warlike people, however, it might be considered in a very different light. The injury done to the individual by the abstraction of his property, being nothing in this estimate when compared with the more important national benefit obtained by the general accession of military virtue."

† The beauty of association is, perhaps, the most comprehensive, and possesses the greatest modifying influence of all the classes of beauty. To the difference of association may, doubtless, be ascribed most of those diversities or modifications of taste which are to be found, not only in different nations, but in the same nation at different periods. Thus the savage files the enamel off his teeth, and dies them black, not because black teeth are *naturally* more beautiful to him than white, but because white teeth are associated, in his mind, with the idea of a dog, and the idea of a dog with a feeling of disgust. All are aware that the ass, which is at present an object of derision, was formerly looked upon with feelings of veneration, and that merely from the different qualities which were then, and are now, associated with the idea of that animal. In like manner, the white dress, which is beautiful to us in summer, because associated with the coolness of snow, becomes, for the same reason, repulsive to us in winter. So, as Hogarth has observed, "the oblong figure which is given to the doors and windows of our buildings is not preferred, because that figure is considered by architects to be naturally more symmetrically beautiful than the circle or ellipse, but because it is associated in the mind with an idea of greater convenience."

or morally beautiful, seem to derive their delight, *fundamentally*, from some *intuitive* perception of their agreement, rather than from any *judgment* and consequent discovery of that agreement on our parts. The colour and form of the rose, and the generous sacrifices of virtue, are beautiful directly they are made known to us: to approve of them requires little or no discernment—we do so immediately, and instinctively. But with those objects which are intellectually beautiful, as with all works of art, there is either a *felt* reference to some ideal standard of nature or excellence, or else a *sensible* comparison of the thoughts which are made to agree with each other. All men are susceptible of the beauty of the rainbow, and of a benefit done for the mere sake of benefitting, because all men are constituted substantially *alike* in this respect. But all are not susceptible of the beauties of acting, music, painting, and sculpture, because they have *not the same* ideal standards of nature* and excellence whereby to judge; and it is only the agreement or disagreement of the object, with this ideal standard in their minds, which gives rise to the feeling of pleasure or displeasure from the contemplation of that object. It is the same in those more purely mental arts, reasoning, poetry, and wit. All men are not equally sensible of the beauty of an argument, a simile, or a joke, because all do *not perceive alike* the agreement of the ideas; and in the perception of this agreement, the greater part, if not the whole of the beauty, consists The thoughts which appear to be in perfect harmony to one, seem utterly discordant to another; and the reasoning, poetry, or wit, therefore, which is an object of extreme beauty to the first, becomes only a string of stupid incongruities to the second. Objects which partake of sensual or moral beauty, and which derive their delight from their natural agreement with our constitution, rather than from any discovery of that agreement on our parts, are *permanently* beautiful—the pleasant feeling which the contemplation of them excites in us being invariable, however frequently they may be presented to us. The golden tints of sunset, and the noble deprivations of virtue, are as delightful to us now as they ever were. With objects, however, which are intellectually beautiful, the pleasant feeling is essentially of an *evanescent* character. It is necessary with objects of this class, in order to excite any vivid delight in our breasts, that the agreement, in the perception of which chief part of their beauty consists, should be coupled with a feeling of some difference, or, in other words, that it should not have been previously observed by us. What so wearisome as an old joke—a stale argument—a worn-out simile—a hacknied tune—however pleasing they might originally have been to us. Some works, nevertheless, are perpetually beautiful, because, at each fresh contemplation of them, we perceive some new relation or agreement which we had not before observed. Thus, the works of Shakspere, Raphael, Canova, Beethoven, Rabelais, and Newton, as sources of delight, are inexhaustible, because the harmonies which they contain and suggest are interminable.

Intellect, then, is the perception of the agreements and differences of things; truth, the feeling consequent on the perception of an agreement; and beauty, at least, in its intellectual character, the feeling consequent on the perception of an agreement, *and* a difference, or, what is the same thing, of an agreement when first observed by us. Hence, truth is eternal—beauty ephemeral. How wise and wonderful an ordination is here! Truth, beauty, and intellect, are the glorious rewards of intelligence. If truth had not been made permanent, our intelligence would have been exerted in vain; if beauty had not been made transient, our intelligence would not have been exerted at all. God, however, in his extreme wisdom and goodness, has decreed otherwise, and has accordingly made truth immutable, so as to render the exercise of our intelligence permanently beneficial to us, and established novelty of agreement a necessary constituent of intellectual beauty; so that the exercise of that intelligence may be a source of ever-varying happiness to us, and, consequently, an additional stimulus to the continual use of it. While to this He has added, most lavishly, a feeling of languor or weariness attendant on the repeated perception of the same agreement, and thus has made, not only the discovery of new arguments a source of intense delight, as well as benefit to Man, but the dwelling over old ones a cause of extreme uneasiness to him.

To return, however, to the consideration of the study of Mental Philosophy as a means of producing a feeling of beauty or intellectual happiness in man. Mental philosophy, as I have explained, is simply the knowledge of the relations and connexions of our thoughts and feelings with each other. It teaches us, particularly, the laws of suggestion in the mind, and so points out to us the principles by which one idea or emotion produces and is produced by another. Beauty, as I have also explained, is, at least, in its intellectual form, that delightful emotion which results from the perception of a certain relation, either between two or more thoughts, or between some external object and an ideal standard of nature or excellence. He, therefore, who has a better acquaintance with the character of the relations necessary to excite this

* That all do not possess the same ideal standard of nature, requires scarcely a moment's consideration to perceive; for it is evident that all do not observe nature alike. The anatomist, in viewing a representation of the human figure, has a standard by which he judges of the work very different from that of one who has never observed the position and development of the various muscles of the body. Mr. Jesse (I think it is), in his "Gleanings from Natural History," relates a criticism of a countryman on a picture of three pigs, feeding, painted by Morland, which is an apt illustration of the different ideal standards of nature possessed by different people. "Well, they be pure-loike, sure-ly," said Hodge, scratching his head; "but there be one fault still:" and when asked what that fault might be, he replied, "Why, whoever seed three pigs a feeding, without one on 'em having his foot in the trou'?"

emotion—that is, a greater knowledge of mental philosophy, and particularly of that most fascinating part of it, the science of beauty or taste—must, it is evident, not only obtain a fine sense of beauty himself, but a greater facility of affecting that sense in others. Reasoning—poetry—wit, that eloquent combination of the three, oratory—painting—music—sculpture—and acting—are only so many branches of mental science—so many modes of producing a feeling of delight in the mind, and, therefore, so many means of conferring intellectual happiness.

In a right system of education, therefore, I conclude that mental philosophy should be taught, and especially that part of it which relates to the science of beauty or taste.* The pupil should be intellectualised not only concerning the character and connexions of his various thoughts and emotions, but more particularly concerning those relations which give rise to the feeling of beauty. He is to be *intellectualised*—mark! not *parrotised*—concerning these relations he is to be accustomed to seek and perceive the agreements, and, consequently, to feel the beauties of the works presented to him; not taught to jabber a certain number of lines from some popular author—nor to disgorge so much jargon from that most irrational of all arts, scholastic logic—nor to make blotches upon paper, and call it painting—nor to commit a breach of the peace with the piano, and style it music. Such practices only blunt, instead of whetting the natural sense of beauty. Let the eye, ear, and mind, be in continual communion with the most beautiful works, and the beauties, or, rather, the relations upon which the beauties of them depend, be clearly developed to the pupil, and he cannot fail to acquire, in one year, a more refined taste, a more lively, rich, and vigorous habit of thought, than he could by hammering on an instrument—dabbing colours on paper—spouting verses—or chopping logic for an age.* A feeling of beauty depends upon *intellection* not *recollection;* and an elegant and rational mind is therefore to be produced only by a continual exercise of the judgment, and certainly not by an incessant cramming of the memory.

* "The philosophy of the human mind," says Dr. Brown, in his excellent work on that subject, "is not that *speculative* and passive philosophy which inquires into the nature of the mental principle, and the mysterious connexion of this with the body which it animates; but that *practical* science which relates to the duties, and the hopes, and the great destiny of Man, and which, even in analysing the powers of his understanding, and training all the various modifications of which it is susceptible, views it chiefly as a general instrument of good, an instrument by which he may have the dignity of cooperating with his Creator, by spreading to others the knowledge, and virtue, and happiness, which he is qualified at once to enjoy and to diffuse." True mental philosophy has no connexion with those vague speculations which made up the whole of the mental science of former years; as, for instance, "Whether the essence of the mind were distinct from its existence? whether its essence, therefore, might subsist when it had no actual existence, and what were all the qualities inherent in it as a nonentity? whether, if the mind have freedom of choice, this independent will be an entity or a quiddity; and whether we should say with a dozen schoolmen, that virtue is good, because it has intrinsic goodness; or, with a dozen more, that it has this intrinsic goodness, because it is good? Whether angels pass from one point of space to another, without passing through the intermediate points? whether they can visually discern objects in the dark? whether more than one can exist at the same moment in the same place? whether they can exist in a perfect vacuum, without any relation to the absolute incorporeal void? and whether, if an angel were in vacuo, the void could still truly be termed perfect?" All which, and such enigmas, have no more connexion with true mental philosophy, than an inquiry into the infinite divisibility of matter has with Chemistry; the proper object of mental science being identical with that of every other science, viz., to observe and compare its various phenomena, and to classify and distinguish them according to their agreements and differences.

* If we consult the biographies of men distinguished for their cultivation of any branch of art or science, we shall find that, in the generality of cases, the development of the taste of the individual for the subject in question, has *preceded his acquirement of it.* Ferguson, the shepherd astronomer, says, in the short account which he has given of his life, "My taste for mechanics arose from an odd accident. When about seven or eight years of age, a part of the roof of our house being decayed, my father, desirous of mending it, applied a prop and lever to an upright spar, to raise it to its former situation; and, to my great astonishment, I saw him, without considering the reason, lift up the ponderous roof as if it had been a small weight. I attributed this, at first, to a degree of strength that excited my terror as well as my wonder, but thinking farther of the matter, I recollected that he had applied his strength to that end of the lever which was farthest from the prop, and finding, on inquiry, that this was the means whereby the seeming wonder was effected, I began making levers (which I then called bars), and by applying weights to them in different ways, I found the power gained by my bar was just in proportion to the lengths of the different parts of the bar on either side of the prop. I then wrote a short account of these machines, and sketched out figures of them with a pen, imagining it to be the first treatise of the kind that ever was written, but found my mistake, when I afterwards showed it to a gentleman, who told me that these things were known long before, and showed me a printed book in which they were treated of; and I was much pleased when I found that my account (as far as I had carried it) agreed with the principles of mechanics in the book he showed me. *And from that time my mind preserved a constant tendency to improve in that science.*"—"We are told, in the Life of Chatterton," says a popular author, in considering the influence of particular suggestions on the intellectual character, "that in his early boyhood he was reckoned of very dull intellect, till he 'fell in love,' as his mother expressed it, with the illuminated capitals of an old musical manuscript, in French, from which she taught him his letters; and a black-letter Bible was the book from which she afterwards learnt him to read." It is impossible to think of the subsequent history of this wonderful young man, without tracing a probable connexion of these accidental circumstances, which could not fail to give a peculiar importance to certain conceptions, with the character of that genius which was afterwards to make grey-headed erudition bend before it, and to astonish at least all those on whom it did not impose."—"The illustrious French naturalist Adanson, was, in very early life, distinguished by his proficiency in classical studies. In his first years at college, he obtained the highest prize in Greek and Latin poetry, on which occasion he was presented with the works of Pliny and Aristotle. The interest which such a circumstance could not fail to give to the works of these ancient inquirers into nature, led him to pay so much attention to the subject of which they treated, that, when he was scarcely thirteen years of age, he wrote some valuable notes on the volumes that had been given to reward his studies of a different kind."—"Vaucanson, the celebrated mechanician, who, in everything which did not relate to his art, showed so much stupidity that it has been said of him, that he was as much a machine as any of those which he made, happened, when a boy, to be long and frequently shut up in a room in which there was nothing but a clock, which, therefore, as the only object of amusement, he occupied himself with examining, so as at last to discover the connexion and uses of its parts; and the construction of machines was afterwards his constant delight and occupation." How many individuals are there in this country who, though very good practical musicians and painters, have no more taste for those arts than they who are utterly ignorant of them; and that for the very simple reason, because, in the acquirement of them, they commenced at the wrong end: their studies having begun with certain exercises, rather than with the perception of the relations upon which the beauties of those arts depend, and wanting which perception, the individual must not only remain devoid of all taste (for therein alone doth taste consist), but find the acquirement of his art difficult and tedious; whereas, were he previously endowed with that perception, it could not fail to become to him both easy and agreeable.

The importance of cultivating this eminent principle in Man has been so exquisitely and eloquently illustrated by one whose keen perception of the beautiful is shown in every page on which he has traced the workings of his benevolent and comprehensive mind, that I should be doing an injustice both to myself and the reader, were I to refrain from quoting what he has said upon the subject. "In looking at our nature," says Dr. Channing, in his lecture on Self-culture, "we discover, among its admirable endowments, the sense or perception of beauty. We see the germ of this in every human being; and there is no power which admits of greater cultivation, and why should it not be cherished in *all*? It deserves remark, that the provision for this principle is *infinite* in the universe. There is but a very *minute* portion of the creation which we can turn into food and clothes, or gratification for the body; but the *whole creation may be used to minister to the sense of beauty.* Beauty is an all-pervading presence; it unfolds in the numberless flowers of the spring—it waves in the branches of the trees, and in the green blades of grass—it haunts the depths of the earth and sea, and gleams out in the hues of the shell and precious stone; and not only these minute objects, but the ocean—the mountains—the clouds—the heavens—and stars—the rising and setting sun, all overflow with beauty. The universe is its temple, and those men who are alive to it cannot lift their eyes without feeling themselves encompassed with it on every side. Now this beauty is so precious, the enjoyments it gives are so refined and pure, so congenial with our tenderest and noblest feelings, and so akin to worship, that it is painful to think of the multitude of men as living in the midst of it, and living almost as blind to it as if, instead of this fair earth and glorious sky, they were the tenants of a dungeon. An infinite joy is lost to the world by the want of culture of this spiritual endowment. Suppose that I were to visit a cottage," he continues, "and to see its walls lined with the choicest pictures of Raphael, and every spare nook filled with statues of the most exquisite workmanship, and that I were to learn that neither man, woman, nor child, ever cast an eye upon these miracles of art, how should I feel for their privation! how should I want to open their eyes, and to help them to comprehend and feel the loveliness and grandeur which in vain courted their notice! *But every husbandman is living in sight of the works of a Diviner artist, and how much would his existence be elevated, could he see the glory which shines forth in their forms, hues, proportions, and moral expression!* I have spoken," he adds, "only of the beauty of nature; but how much of this mysterious charm is found in the elegant arts, and especially in literature. The best books have the most beauty. The greatest truths are wronged if not linked with beauty; and they win their way most surely and deeply into the soul, when arrayed in this their natural and fit attire. *Now, no man receives the true culture of a man, in whom the sensibility to the beautiful is not cherished; and I know of no condition in life from which it should be excluded. Of all luxuries, this is the cheapest and nearest at hand; and it seems to me to be most important where coarse labour tends to give a grossness to the mind.* From the diffusion of the sense of beauty in ancient Athens, and of the taste for music in modern Germany, we learn that the people at large may partake of refined gratifications, which have hitherto been thought to be necessarily restricted to a few."

CHAPTER XI.

THE NECESSITY FOR TEACHING MORAL PHILOSOPHY.

We have now to consider the importance of the study of that class of knowledge which relates to the moral happiness of Man. Moral Philosophy is that branch of science which traces the connexions between our feelings and actions, or, rather, between our emotions and the impulses and desires which incite us to act in a particular manner towards our fellow-creatures. It has for its subject, therefore, the relations of man to man, and for its object the promotion of his happiness to the highest possible degree, by teaching him what dear, kind-hearted Oliver Goldsmith has termed "the luxury of doing good." Man is placed not only in a material and mental, but also in a social universe, and to him accordingly are given senses, intellect, and conscience. He is endowed with a constitution susceptible not only of pain and pleasure from the operations of matter, and beauty and languor from the emanations of mind, but also of love and hate, anger and gratitude, self-approbation and remorse, from the acts of himself and others. And as in the material and mental universe, according as we get acquainted with the laws which regulate the succession of events without, and the suggestion of thought and feeling within, so are we enabled to promote our physical and intellectual enjoyment; likewise is it in the moral universe: according as we grow conversant with the relations between our emotions and actions, and thus learn the supreme delight that waits upon benevolence and the bitter disquietude that dogs revenge, so do we become the more able and anxious to cherish the good, and to check the evil passions of our nature.

In Chapter V. I pointed out the difference between our passions and intellect. The passions I showed to be the principles or *causes* of action in Man—the intellect the faculty which discovers the *means* of action. The former incite us to *desire* a particular object, while the latter devises *the mode of attaining* that object. Our passions form the *motives*, and our intellect the *plans* of our conduct; and here lies the grand distinction between wisdom and goodness. Goodness *wills* and wisdom *executes*. To inculcate wisdom is the aim and end of *natural and mental* philosophy; to inculcate goodness is the aim and end of *moral* philosophy;

physical and metaphysical science relate to the formation of the intellect, ethical or moral science to the formation of the character. The importance of the last-named subject requires a few remarks.

Character is simply that predominant principle in a human being which is the chief motive or grand cause of all his actions. The discovery of this ruling passion, or main-spring, as it were, of the mechanism of the man, constitutes what is called the analysis of his character. In order to understand how the character is formed—to discover what gives this predominancy to different principles in different persons, we must first comprehend the nature and limits of the three causes of human action, viz., appetites, impulses, and desires. Appetites are those states of uneasiness or pain which arise from some organic defect, and which gradually *increase* in intensity according as the gratification of them is protracted. Impulses are those vivid states of pain which arise either from our thoughts or perceptions, and which gradually *decrease* in intensity according as the gratification of them is protracted. Desires are those states of uneasiness or pain which arise from the conception of some good or evil that we have previously experienced.* The chief cause of action in us, then, is pain or uneasiness ;† the removal of that pain or uneasiness, pleasure : for instance, to be hungry is pain, to satisfy our hunger, pleasure; to pity is pain, to relieve the object of our pity, pleasure; to be avaricious is pain, to gratify our avarice, pleasure. Our appetites differ chiefly from our impulses in their *objects*, our appetites having for their end the attainment of some physical good, our impulses some moral good or evil to ourselves or others ; while our desires are distinguished from both in their *origin*. Our impulses and appetites are the result of certain *laws of our constitution*, our desires the result of *experience*. Impulses and appetites take *no cognizance of consequences*, and are called into action solely by the feeling of the present pain; whereas desires *always regard the end*, and are produced only by the contemplation of the prospective good or evil. Desires are the result of *foresight*, appetites and impulses of *instinct*. We are *induced* to desire to obtain or to avoid certain objects, by the remembrance or conception of some pain or pleasure previously connected with them. We are *forced* to seek, or impelled towards others, by some inherent and intuitive principle of our nature. Our impulses and appetites are *natural and necessary principles of our sensual and moral constitution;* our desires *the artificial products of our mental.* The former are the same in all men ; the desires alone are different, because a knowledge of the different emotions as well as the pains and pleasures attached to the gratification of our various appetites and impulses, depend upon *experience*, and this must necessarily differ in different men. It is this difference of experience respecting the pains and pleasures consequent on certain actions that gives rise to the different desires, and hence to those distinctive principles of action which constitute what are called the characters of men. On looking into our natures, we discover a most just and beautiful balance of our impulses towards good and evil. There is a predisposition or proneness neither one way nor the other, but the same beautiful harmony is perceptible among them as is discernible throughout all creation. If we are inclined to hate, we are also disposed to love; if we possess anger, we have also gratitude; if we are endowed with selfishness, to us also is given sympathy. But Man is born in a world of circumstances, and desires are given to him not only by the tastes and habits of society, but by the folly of parents, and neglect as well as ignorance of schoolmasters, which certainly tend to develope the evil rather than the good impulses of his nature. In his moral disposition, Man seems not naturally to differ, as I pointed out in the first part of this treatise, from many other social animals. His desires alone constitute the grand distinction not only between man and the brute, but also between man and man. *According as we become convinced of the happiness or misery derivable, directly or indirectly, from the gratification of a particular impulse or appetite, so does the remembrance of that happiness or misery become converted, by the foresight peculiar to our intellectual nature, into a desire either to promote or to avoid the recurrence of the one or the other feeling; and according to the means which our intellect points out to us as the surest and readiest mode of promoting or avoiding the recurrence of that happiness or misery, so is a peculiar direction given to the desire; while, according to the intensity of the happiness promoted or misery avoided by these means, so does that desire become either the prevailing principle of action or merely a minor trait of our character.* A certain predominant desire, or prevailing principle of action, coupled with a particular mode of gratifying that

* There are desires to avoid as well as desires to obtain certain objects. Desires to avoid arise from the conception of some evil; those to obtain, from the conception of some good previously found to be connected with their objects.

† Here I cannot refrain from pausing to point out the extreme beauty and benevolence of this dispensation. Had not pain been made the primary cause of action, our lives would indeed have been *short* and merry ones; if our appetites had not been ordained to be a source of uneasiness to us, we should have sat still and *starved with pleasure*. The Almighty, however, in His infinite wisdom and goodness, has arranged otherwise; and we are now, by the uneasiness which He has made to accompany our wants, driven to seek to remove the unpleasant feeling, and so made to add new life and vigour to our constitutions. Hence, we see the wondrous wisdom and benevolence displayed in the creation of pain or evil, concerning the incompatibility of which with the attributes of the Creator, so much has been written. Pain or evil, morally considered, is simply a principle of action inducing us to seek that which is necessary, or to avoid that which is detrimental to our physical or social existence. Thus it would have been but just on the part of the Creator, had He given us no motive, but left us perfectly free as to the consequences in this world, to do, or not to do that which He had ordained; but with that lavish benevolence which is so conspicuous in all His works, and especially in the construction of the mind, He has not only connected our highest happiness with our highest duty, but added, as an additional incentive to the performance of it, the severest pain as consequent to those acts which are in direct violation of it; so that He has given us not only the strongest stimulus to act in conformity with His commands, but *also the most urgent of motives to avoid doing that which is opposed to them.*

desire, is then all that constitutes character; and the intensity of the feeling experienced, as well as the facility of promoting the recurrence of that feeling, are the two principal causes upon which the formation of character depend. Thus the character we call a fop, is a fop because the desire of approbation is the prevailing principle of action with him, and fine clothes the means by which he endeavours to gain it; and he has become a fop, not because he possessed naturally more vanity or love of approbation than you or I, but because approbation is the highest happiness he knows, and dress the safest and easiest mode of obtaining it.

Now, the especial object of all moral philosophy is to teach us the connections between our impulses and emotions—to point out to us the happiness consequent on the exercise of our benevolent impulses—the gratitude, the love, the esteem, the consolation that are the rewards of any benefit—and the miseries incident to the gratification of our malevolent ones—the hatred, resentment, indignation, contumely, and remorse that are the penalties of any injury; and so by *proving*, not *prating* to us of, the blessings of the mighty truth—that Man's greatest happiness lies in the happiness of those around him—to endeavour to establish the promotion of this happiness as the one all-absorbing desire—the ruling passion, or character of the pupil.

The formation of the character is a subject of such vital importance, not only to the individual, but society in general, and forms—or, rather, should form, so prominent a part of education, and is, moreover, *so utterly neglected in every school of the present day*, that I have deemed it right to devote a separate treatise to the consideration of that subject, which, together with the means of cultivating the moral functions of human nature, will constitute the subject of the second part of this work. At present, I feel that I cannot do better, in closing this brief statement of the benefits arising from the study of moral science, than quote the opinions of one who read the heart of Man like a book.

"One very powerful and salutary influence of moral science," says Dr. Brown, in his "Lectures on the Philosophy of the Human Mind," "arises directly from the mere contemplation of the objects with which it is conversant—the benevolent affections—the pleasure which attends the sacrifices made by generous virtue—and all the sublime admiration which they excite—the sordid, and malevolent and joyless passions of the selfish—the fear and shame that attend the guilty in society—and the horrors that with the certainty of constant return—more dreadful than their very presence—await them in their solitary hours. It is good to have these often before us, and to trace and contrast all the immediate and remote effects of vice and virtue, even though we should form at the time no direct reference to our past or our future conduct. Without any such reference, we must still be sensible of the pleasure and serene confidence which attend the one, and of the insecurity and remorse which for ever hang over the other, and the remaining impressions of love and disgust will have an influence on our future conduct, of which we may probably be altogether unconscious at the time. It is, in truth, like the influence of the example of those with whom we habitually associate, which no one perceives at any particular moment, though all are subject to it; and to meditate often on virtue and happiness is thus almost to dwell in a sort of social communion with the virtuous and happy. The influence of moral conceptions has, in this respect, been compared to precious odours, amid which we cannot long remain without bearing away with us some portion of the fragrance.

"The nature of the process by which the moral benefit arises from the contemplation of moral objects frequently repeated," continues he, "is far from obscure, though it depends on a process to which you may perhaps have paid little attention—the influence of the associating principle in the mind—that principle by which ideas and other feelings which have frequently coexisted, acquire for ever after an almost indissoluble union. It is not merely, therefore, by having traced more accurately than others, the consequences of vice and virtue as affecting the general character, that the lover of moral science strengthens his admiration of virtue and abhorrence of vice; but, by the frequent consideration of virtue together with the happiness which it affords, and of vice together with its consequent misery, the notions of these become so permanently and so deeply associated, that future virtue appears like happiness about to be enjoyed, and future vice like approaching misery. The dread of misery and the love of happiness, which are essential principles of our very physical existence, are thus transformed into principles of moral conduct that operate before reflection, with the rapidity and almost with the energy of instinct, and that after reflection add to our virtuous resolutions a force and a stability which, as the results of mere reasoning, they could not have possessed."

In a right system of education, then, I conclude that moral philosophy should be taught—that the pupil should be made to perceive the relations and connections between his acts and emotions, and so, by being convinced, *practically*, that Man's greatest happiness lies in the happiness of those around him, be induced to desire and promote the well-being of his fellow-creatures.

CHAPTER XII.

WHY A KNOWLEDGE OF LANGUAGES, HISTORY, ETC., SHOULD BE ADDED INSTEAD OF BEING AS NOW, PREFIXED TO INTELLECTUAL EDUCATION.

In the chapters immediately preceding, I have explained my notions, as well as my reasons for adopting those notions, concerning the matter of education. An acquaintance with the relations between the things and events in the world without,

of thought and feeling in the mind, and of impulses and emotions in the heart, these are the only direct means of happiness, and consequently these alone constitute real knowledge. They are the *necessaries*, whereas all other matters are merely the *luxuries* of knowledge; these the *essentials*, those only the *accessories* to wisdom; and, as Tillotson has truly observed, "A man who does not know those things that are of use and necessity for him to know, is but an ignorant man, whatever he may know beside." A man may be conversant with every language and history, from Sanscrit to Slang, from Confucius to yesterday's "Times," and yet know no more of Nature, or himself, than the veriest animal that crawls. Languages are the ornaments of education. If we would *intellectualise*, we must teach relations, and not words—truths, and not signs. A man is to be educated as a man, an intellectual and moral being, and not as a parrot, a loquacious one. It has been said by a king more learned than wise, that a man is as many times a man as the number of languages he knows: that he is as many times a parrot I am ready to allow; but parrotry does not seem to me to be the great aim and end of Man's existence. Language is certainly a most wonderful power and benevolent gift; and one to which, I believe, Man owes more of his reason than is generally supposed; but in a mere verbal repetition of that power I can see little or no benefit. It appears to me as senseless and idle as creating two instruments to effect that which would be as well compassed by one. I love language much; but I love that which is, in my opinion, the whole and sole use of language—the communication of knowledge—more. Latin is a fine intellectual luxury; it partakes of literary epicurism, and there is generally little health in your epicure. The man who requires a book to be larded with Latin before he can digest the wholesome wisdom it contains, is very much like the beggar who could not eat his lamb without lemon. But language cannot be looked upon even as a condiment to knowledge. Metaphors and elegance of style are the true spices that give a relish to wisdom; whereas, words are but the instruments with which we dispense it to our friends. He, therefore, who possesses a fine knowledge of languages, and yet knows little concerning the laws of nature, thought, and passion, is similarly situated with a man who has a splendid service of gold and silver plate, and nothing to serve in it but water-gruel. Language is of use solely as a means of communicating thought. The communication of thought is a process very nearly allied to Mrs. Glasse's method of cooking a hare. The first and chief requisite is to get the article itself. My receipt for education is,—first, get the thought, and then add as many ways of dressing it as you please.

For the same reason, History and Biography should be made the appendices, rather than, as now, the prefaces to education. A knowledge of History and Biography is of advantage solely as a means of becoming acquainted with the future. This, indeed, is the only use of the past. A man who is continually contemplating what has happened, without any regard to that which is to come, is like one walking backwards. We should labour along the stream of time, as oarsmen on a river, with our faces turned towards the past, as the means of advancing better in the future. History is useless, unless read with a philosophic spirit; and to instil this spirit is the first and chief aim of education. All sciences are merely histories of the various facts connected with the subjects to which those sciences relate, *intelligently considered;* and without this habit of intelligent consideration, a knowledge of the different changes that have taken place in human nature can only be wasted on the student, in the same manner as the changes that are going on in material nature are lost to those who are ignorant of Chemistry, and, consequently, have no general law whereto to refer them. We are all historians in our way; and it is but the manner in which we observe and register the past, that gives distinctions to our thoughts and minds. In one man's brain, the different facts that have come under his notice, are recorded precisely in the order in which they occurred; in another, they are regularly classified and systematically arranged, according to their relations. Of the former characters, our courts of law every day furnish specimens. A common man called upon to give his testimony concerning a particular fact, can only recapitulate the events *seriatim*, as they happened; if he be interrupted, he must recommence; and unless allowed to disgorge the whole train with all its tedious and irrelevant minutiæ, he is entirely at fault. Of the latter class, our best orators and authors afford examples. The methodical and comprehensive arrangement of their subject, the pertinence of their every remark to the theme they are expounding, as well as the soundness of the conclusions at which they arrive, are all evidences of the intelligence with which they have observed the various facts that have come under their notice. Without this intelligent spirit of observation, History becomes only a series of isolated events, and, therefore, only so much lumber in the brain. The past is useful only as the *pilot* for the future. The grand distinctive quality of human nature is its progressiveness. Man's true sphere, therefore, is the *future*, and the more present this becomes to his mind, the more profound becomes his philosophy and his religion. *To deduce what will be, from what is, by means of what has been, is the whole and sole use of historical knowledge.* History is, as it were, an intellectual telescope; and, according to the manner in which we apply it to our observation, so does the view of the observer become more enlarged or contracted. It is this difference of observation which constitutes the main distinction between wisdom and learning. Wisdom is *foresight*, learning merely *pastsight*. The wise man contemplates what *may* or *will* happen—the learned

one only what *has* happened. The one is continually progressing, the other retrograding. Wisdom looks forward to the end, learning turns backward to the beginning of things. The sage ascends the steps of time till he reaches the bright halls of immortality—the scholar descends till he arrives at the dark vault of mortality. Which of these is the proper sphere of Man—of Man, the intellectual and moral being—I leave it to the reader to decide.

The object of our present system of education is to inculcate only learning; the object of a right system should be to instil wisdom, and that wisdom ever guided by goodness.

CHAPTER XIII.

A MORE PARTICULAR DESCRIPTION OF THE BASIS AND PLAN OF INTELLECTUAL EDUCATION.

It may be as well to add here a more particular description of what I conceive should form the basis and plan of Intellectual Education. It will be remembered that, in entering upon the consideration of education, and taking a general view of the subject, I said that it appeared to me to have three distinct branches or objects; namely, the moralisation, prudentialisation, and intellectualisation of the being to be educated. The first branch, or moralisation of the being, has for its object the inculcation of a knowledge of the relations between his various acts and emotions, and the cultivation of the sympathies of the pupil with a view to the promotion of the happiness of his fellow creatures. The second, or prudentialisation of the being, has for its object the inculcation of a knowledge of the relations between labour and capital, and the gratification of his desires, and the encouragement of habits of industry and frugality in the pupil, with a view to the promotion of his own happiness. And the third branch, or intellectualisation of the being, has for its object the inculcation of a knowledge of the relations of the different substances and circumstances in nature, with a view to the more easy and certain attainment of the objects of his desires.

To the latter branch, or intellectual education, (which forms the main subject of the present treatise) there are also three distinct courses or grades. There is, first, the *scientific* course or grade, wherein the pupil should be given a knowledge of the different sciences or the first principles of material, mental, and moral nature; *for without a knowledge of these first principles, it is impossible for him either to reason at all, or to reason correctly.* There is, secondly, the *artistic* course or grade, wherein the pupil should be made to *apply* those principles either to the practice or comprehension of the different arts, polite and vulgar; *for without the application of those principles, it must be either a work of drudgery to practise those arts, or a matter of impossibility to comprehend them.* And there is, thirdly and lastly, the *avocational* course or grade, wherein the pupil should be given a more intimate acquaintance with some one branch of science, or a greater facility in the practice of a particular art, so that he may be enabled, by his superior knowledge of that science or skill in that art, to gain a livelihood by the continual pursuit of it.

CHAPTER XIV.

HOW TO TEACH THAT WHICH SHOULD BE TAUGHT.

Having explained my notions concerning the matter upon which the pupil should be intellectualised, and pointed out what to teach, I now proceed to inquire into the only remaining subject for consideration, namely, How to teach it—or, in other words, the means by which the pupil is to be rendered intelligent.

The term Education, in common parlance, has a double meaning. It is spoken of both as an art and a work of art. In one sense, it refers to the mere fact of having been educated—as when we speak of a man of education; and in another, to the act of educating—as when we speak of the education of Man. It is thus used to express both the process and the result of the process of teaching. What the result of the process should be, I have explained; what the process itself should be, remains to be explained. The object of education, I have shown, is to teach the pupil all that is known, and to implant in him such a spirit of inquiry as shall make him seek to increase the knowledge respecting the order and harmony of the beautiful world without him, and also of the still more beautiful world of thought and passion within him. The means of teaching this knowledge, and instilling this spirit, I have now to set forth. To settle the object of education is a very important point; but to discover the means of attaining that object is more important still. The matter to be taught relates to the pupil—the mode of teaching it to the tutor. To inquire into the former, is to consider what should constitute the education of the educated; the latter, the education of the educator. The one has been done; the other I now proceed to do.

CHAPTER XV.

THE CHARACTER, THE OBJECT, AND THE KNOWLEDGE REQUISITE FOR THE PURPOSE OF TEACHING.

Teaching is characterised by being the act of communicating certain facts or truths to a being previously unacquainted with them. It is, as it were, the dissemination of intellect—the transmigration of mind. To teach is to give to the needy that which makes them immeasurably richer, and leaves us no poorer in return; it is to clothe ignorance with wisdom—to dispense virtue unto vice; it is to set up a fountain in the desert—to shed

manna in the wilderness—to convert the human animal into the god-like man. The greatest men have been the greatest teachers. Shakspere, Newton, Locke, Bacon, Plato, Zeno, Aristotle, are great, because they communicated new truths to mankind; indeed, we are told, that to teach the glorious lesson, to communicate the grand truth of all—that Man's greatest happiness lies in the promotion of the happiness of his fellow-man—came God himself among us. How noble, then, is the character of teaching! No less so is its object.

To make Man wiser and better—to give him a greater means of happiness himself, and a stronger desire to promote the happiness of others—to train the imbecility and ignorance of infancy into all the virtue, and power, and intellect of mature manhood—to form of a creature, the frailest and feeblest perhaps which Heaven has made, the intelligent and mighty sovereign of the whole animated creation—the interpreter—adorer—and almost the representative of Divinity—this is the real object of teaching.* "The noblest influence on earth," it has been truly said, "is the influence on character; and this is—or rather should be, the chief aim of the teacher. He who puts forth this does a great work, no matter how narrow or obscure his sphere. The small schoolmaster—the father and mother of an unnoticed family, who, in their seclusion, awaken the mind of one child to the idea and love of perfect goodness—who arouse in him a strength of will to repel all temptation—and who send him out prepared to profit by the conflicts of life, surpass in influence a Napoleon breaking the world to his sway. And not only is the work higher in kind. Who knows but that the teacher is doing a greater work, even as to extent of surface, than the conqueror? Who knows but that the being thus inspired with holy and disinterested principles may communicate himself to others; and that, by a spreading agency, of which the teacher was the origin, improvements may be diffused through a nation—through the world?"† Such is the high character and object of teaching. I know no art more eminent either in its nature or result—and no art, therefore, which requires greater knowledge for the attainment of its purpose.

It is not many years since the brilliant truth first flashed upon us that art is the offspring of science; and it is to the propagation of this truth—the direction it has given to the minds of men—the desire it has created among our philosophers diligently to observe, and by patient experiment to ascertain, the nature of the things which are the subjects of our arts—that we owe the multiplication of our means of wealth, and the present proud preeminence of England as a manufacturing country.

Now teaching, in its intellectual capacity, is the art of converting ignorance into wisdom; in its moral, that of separating virtue from vice. It is the operation of mind on mind, in the same manner as any chemical art is the operation of matter on matter; and according as *a knowledge of the laws of material bodies* is necessary for the right performance of the one, so likewise is *a knowledge of the laws of thought and passion* requisite for the proper conduct of the other. To give a particular colour to a particular substance, as in the art of dyeing, it is necessary to become acquainted not only with the nature of that substance, so as to be able to remove all those circumstances which might prevent the action of the colouring matter upon it; but also to find out some other body which has an affinity both for the substance and dye, and which may thus act as a mordant, or means of combining the one permanently with the other. So it is with the communication of knowledge. To impart truth to a person, we should know not only the peculiar conformation of the mind of that person, in order to render it *fit to receive* the truth, but also the relations between the various thoughts and feelings, so that we may be able to connect it with some emotion, and thereby to *fix it* indelibly on the memory. But it certainly cannot require a moment's consideration to perceive that, as physical science is the handmaid of art and manufacture, so intellectual and moral science is—or, rather, should be, the helpmate of education, which is the art of inculcating wisdom—the manufacture of mind and character. What should we think of the school which, professing to fit persons to fill the situation of *experimental chemists, instructed them only in the history of alchemy, the theory of phlogiston, and such like antiquated absurdities, omitting, at the same time, all knowledge of the nature and laws of the substances with which they were to work*, should we not look upon such a system as the very climax of folly? And yet about as sapient is the plan of those schools which, in proposing to qualify men *for the office of teachers, educate them in all things but that which it is* ABSOLUTELY REQUISITE *for them to know; viz., the powers, propensities, and laws of the mind upon which they are to operate*, AND THE DEVELOPMENT AND EXPANSION OF WHICH IS TO CONSTITUTE THEIR WHOLE AND SOLE DUTY. Surely, if a knowledge of the structure and functions of the various parts of the body be considered indispensable to the administration of medicine, a like knowledge of the anatomy and physiology of the mind is equally indispensable for the administration of truth and virtue—the medicine of the soul.

I conclude, therefore, that a knowledge of human nature—an acquaintance with the laws of thought and passion, is requisite for teaching; and, consequently, that it is only by a correct inquiry into, and adaptation to, those laws that a proper system or mode of intellectualisation can be framed. This inquiry I now proceed to prosecute.

* See Brown's Philosophy.
† Channing on Self-Culture.

CHAPTER XVI.

WHAT IS IT THAT GIVES RISE TO THE DIFFERENCE OF INTELLIGENCE IN DIFFERENT MINDS?

THE first desideratum in this inquiry is evidently the discovery of the principles which modify or give diversity to the powers of different minds—to ascertain if this diversity arise from any innate difference in the faculty of intelligence in those minds, and if not, from what other causes the modification proceeds.

Intelligence, as I have explained, is the act of perceiving the agreements and differences of things. But what constitutes the agreement, and what the difference of things? Unless these two points be distinctly understood, it is clear that we cannot form any correct notion as to the objects and limits of the faculty that perceives them. The one, however, is evidently the negation of the other. A difference is said to exist between two or more things in a certain respect, when there is an absence of agreement among them in that respect. To explain, therefore, that which makes things agree or appear similar, is also to explain that which, being absent, causes them to differ or seem dissimilar. The agreement, or similarity of one object with another, depends upon an identity between them in some circumstances, coupled with a diversity in others. Two or more objects are said to agree, or be *similar*, when they are *identical in some* respects; they are said to be the *same* when they are *identical in all.* Identity then, in a few particulars, together with diversity in others, constitutes similarity or agreement;* identity, in every particular, sameness or unity. Thus a good portrait seems to be like, or similar, to the person portrayed, because it presents to the eye the same appearance as the figure of the original. In this one respect a perfect identity exists between the picture and the party pictured; but in every other there is an utter diversity between them; to the sense of feeling no two things could be more different. Accordingly, when several objects produce *directly* the same impression, in one or more respects, upon our senses, they are said to be like, or similar in *appearance.* When they do so *indirectly*, that is, in connexion with other substances, they are said to be homogeneous, or similar in *nature;* and when they do so *both directly and indirectly*—or, in other words, when they affect us, and are themselves affected by other things each in the same manner, they are said to be identical, or similar, *both in nature and appearance.* Thus the paste ornament, which has the *same* lustrous splendour as the brilliant, and is in some cases calculated to deceive the eye of even the best judges, is said to be like, or similar in appearance to, the diamond, so the charcoal, which is resolvable by combustion into the *same* gas as that gem, is said to be homogeneous, or similar in nature with the diamond; and so the little gem, which breaks and scatters the light in a thousand beautiful colours, and which by the action of intense heat becomes converted into an air which extinguishes flame, and renders lime-water turbid, is said to be identical, or similar, both in nature and appearance, with the diamond, and consequently to be a real diamond, or the diamond itself. Hence we see that an agreement in the appearance of several substances consists in the identity of their operation, in one or more respects, upon our senses—an agreement in their nature in the identity of their operation upon other substances—and an agreement both in their nature and appearance—or, a positive sameness among them in the identity of their operation both upon us and other things. To discover an identity of appearance or action among the various substances in nature is, then, the sole object of Man's intelligence. Let us now endeavour to ascertain its limits—let us try to discover whether that power, *per se*, by nature, differs in different individuals. *This—strongly opposed as the fact is to the general opinion—it is evident, from the very character of the object of the faculty, cannot possibly be; since the power itself depends upon a feeling of sameness or identity, and that feeling is one which does not admit of degree. We cannot suppose two or more things appearing samer, or more same, to one person than another—nay, the very nonsense of such language shows at once the gross absurdity of the*

* "Similarity," says Hazlitt, in his Essay on the Principles of Human Action, "has been defined to be partial sameness. Curve lines have a general resemblance or analogy to one another as such. Does this resemblance then consist in their being partially the same? This may be said when the difference arises from drawing out the same sort of curve to a greater extent; because by adding to the shorter curve, I can make it equal to the other. But I cannot, by adding another line to an oval, convert it into a circle, because these two sorts of curves can never coincide, even in their smallest conceivable parts. It should seem, then, that *similarity is not to be deduced from partial sameness*, or the having one thing, exactly the same, common to both. But they have *the same general nature* as curves. True; but in what does this abstract identity consist? Is it not the same with similarity? So that we return to the same point from which we set out." But this is the very reverse of the fact: for if, according to the author's own showing, elliptical and circular lines have, as curves, the *same* general nature—and this *abstract or partial identity* is *the same with similarity*—then it is evident that he returns to a point *diametrically opposite* to that from which he set out, which was to prove that *similarity was* NOT *the same with partial identity.* In the example which he gives of a long and short curve of the same sort being partially identical, because he can, by adding to the shorter curve, make it *equal* to the other, he refers principally to their *identity as to quantity*—for this is all that the term *equality* can be said to express. Quantity, however, is but *one* of the few relations in which objects may be compared; and it is evident that there must necessarily be a capacity for as many points of identity between two or more things, as there are relations or points of comparison among them. Thus two or more lines may be compared as to their character or relative position of their parts, as well as to their quantity or number of those parts; and, admitting of comparison, they must also admit of identity in this respect as well as the other. Now the peculiar character of all curve lines is, that no two of their parts consecutively flow in the same plane or direction. It follows, therefore, that every curve—whether circular or elliptical—must, *as curves, be identical in this respect; while the degree or extent of the deviation* of each of their respective parts from the plane or direction of that which immediately precedes it, constitutes the *particular species* of curve, or point of *difference, in character;* and consequently the *partial identity*, or *identity and diversity* between them. We must remember that *identity in one or more respects constitutes sameness of genus—identity, in several respects, sameness of species:* and *identity*, in EVERY *respect, sameness among individuals.*

*notion.** Two or more things may, however, seem *more or less like* to different persons, because likeness or similarity depending, as I have explained, upon identity in some respects, coupled with diversity in others, the parties may respectively perceive *a greater or less number of points of identity or sameness among the things compared.*

It is then, I think, clear as demonstration, that naturally men cannot differ in the power of intelligence. What, then, is it that produces the modification or diversity of power in that respect which is so apparent in different minds? Why do individuals vary in every degree in the faculty of intelligence—from the genius to the scholar—from the scholar to the boor—and from the boor to the idiot? They do so, because mankind vary also, by equally minute degrees, in their powers as well as opportunities of observance—or, what is the same thing, in the faculty of attending to and in the habit of comparing the various phenomena of nature; for intelligence being simply the act of detecting the particular qualities in which two or more objects are identical or diverse, it is evident that the detection of this identity or diversity can be *the result only of minute attention* to those objects—or rather *to certain qualities of them abstracted and apart* from the rest. To the generality of persons, for instance, all sheep appear alike, but to the shepherd, who has *minutely attended* to, and contrasted their various characteristics, in form and feature, each member of the flock is as different and distinguishable from the rest as one human being from another. Now, the philosopher, we must remember, does no more than the shepherd; he, merely *by close observation or attention to the individual qualities of bodies*, detects diversities among objects apparently identical, and discovers certain points of identity among others which seem to be totally different, and classifies and distinguishes those objects accordingly.

To what superficial observer would any identity present itself between the *glittering and pellucid* diamond, that is the *hardest* of all known substances, and the *dull black* charcoal, that we can *crumble betwixt our fingers?* and yet, from a *very minute* attention to the action of this little gem upon the rays of light, and a *comparison* of this action with that of other *carbonaceous* substances, that profound observer, Sir Isaac Newton, was enabled to surmise its connexion with that class of bodies, many years before it was proved, by contemplating it in connexion with intense heat, to be absolutely identical with them in constitution. Moreover, what difference in the power of intelligence does it require, to perceive the constitutional identity of those two bodies, when they are found to be each resolvable into the *same* substance? All that is wanted, even to *discover* it, is a difference in the *time* or *intensity* of the attention devoted to them.

There is a description of the process and intellectual effect of attention given by Condillac in his "Logique," which is so very simple and convincing, that I cannot do better than quote it here:—"Let us imagine a castle," he says, "which commands from its elevation an extensive view of a domain, rich with all the beauties of nature and art. It is night when we arrive at it. The next morning our window-shutters open at the moment when the sun has just risen above the horizon, and close again the very moment after. Though the whole sweep of country was shown to us but for an instant, we must have seen every object which it comprehends, within the sphere of our vision. In a second or third instant we could have received only the same impressions which we received at first; consequently, though the window had not been closed again, we should have continued to see but what we saw before. *The first instant, however, though it unquestionably showed us all the scene, gave us no real knowledge of it; and when the windows were closed again, there is not one of us who could have ventured to give even the slightest description of it*—a sufficient proof that we may have seen many objects, and yet have learned nothing. At length, the shutters are opened, to remain so while the sun is above the horizon. Even now, if in a sort of extacy we were to continue to see *at once*, as in the first instant, all this multitude of different objects, we should know as little of them, when the night arrived, as we knew when the window-shutters were closed again after the very moment of their opening. *To have a knowledge of the scene, then, it is not sufficient to behold it at once, so as to comprehend it in a single gaze; we must consider it in detail, and pass successively from object to object.*" This is what nature has taught us all. If she has given us the power of seeing *many objects at once*, she has given us also the faculty *of looking at one*, and of feeling its relation or *agreement with some other.* It is this contemplation of any *one object apart* from others which constitutes *attention*—and it is this feeling of the relation or *agreement of that object* with some other, which constitutes what we call *intelligence.*

I think we may then safely conclude, that attention modifies intelligence, and that the difference in the power of intelligence so observable in different minds, is produced chiefly by the difference in the time or intensity of the attention devoted by those minds to the contemplation of the individual or abstract qualities of things.

* But the nonsense of this language may seem to proceed from an incorrect use of the term "same." *Two or more things*, it may be said, cannot appear samer, or more same, because the notion *of unity* is necessarily included in that of *sameness*—that which is *absolutely the same*, must be *absolutely one.* The fallacy of such reasoning, however, will be evident, when we reflect that we can know a thing to be *the same only* by its producing upon us, directly or indirectly, *the same impression at one time* AS *it did at another.* The *two effects* must be felt to be *identical*—or, in other words, *the one* must appear to us *the same* AS *some other*; and, being felt to be identical, we then—by a necessary law of our mental constitution, which leads us to ascribe similar causes to similar effects—naturally refer the two effects *to one object or cause.* Indeed, *sameness* being simply *perfect agreement*, it is clear that there must be *two or more phenomena before any agreement can be felt.*

CHAPTER XVII.

THE DIFFERENT POWERS OF ATTENTION APPERTAINING TO DIFFERENT INDIVIDUALS.

Now that there are *different powers of attention* in different individuals, must be evident to all; and that this diversity of attentiveness depends upon a diversity of constitution or *particular temperament* appertaining to particular persons, I hope to be able to make equally clear.

Every one must frequently have observed in himself a greater capability to attend to a subject at one period than at another. At certain times we are more *volatile*, *restless*, and *excitable;* at others, more *sedate*, *calm*, and *contemplative;* at others, more *lethargic*, *dull*, and *callous*, than usually; and if we look around us, we shall find one or other of these temperaments predominating in every man. The *volatile*, the *sedate*, and the *lethargic*, are the three forms of *temperament*, or different grades of attentiveness into which all the varieties of mental constitution are reducible, and which, consequently, give rise to the apparent diversity in the power of intelligence, not only in *different persons*, but also in the *same person* at *different periods* of life. In *childhood* the temperament is especially *volatile*, and this age is accordingly characterised by the peculiar restlessness—the difficulty and irksomeness of attending to one subject for any length of time—the gay and cheerful character of the feelings—the extreme excitability of the emotions, and the extraordinary evanescence of them when excited, which are the necessary results of a lively and rapid succession of ideas and feelings, and which *lively and rapid succession of ideas and feelings is the distinctive attribute of the volatile temperament.* In *manhood*, the volatile temperament of early life is changed to the *sedate*—or, in other words, the succession of ideas and feelings becomes *slower* and *more distinct*, and the mind is therefore capable of more fixed and steady attention. Hence there is a greater permanence of impressions and desires, and consequently a fuller development of the intellect and character of the individual at this period than at any other time of life. As we *advance in years*, the sedate gradually subsides into the *lethargic* temperament, or that peculiar *sluggishness* and *indistinctness of conception*—and consequently that deficiency of memory and imbecility of intellect—as well as that indifference and callousness to the ordinary excitements of life, which are the prevailing characteristics of old age. The *extremes* of these three forms of temperament are equivalent to the three forms of *insanity*, namely, *derangement*, *monomania*, and *idiotcy*. An *excess of volatility, or extreme liveliness and rapidity in the succession of ideas*, would naturally give rise to all the various characteristics of mental derangement; viz., to that extraordinary rapidity and disorder in the succession of thoughts—that apparent want of connexion or association among them—and the consequent delirium or incoherence and confusion of ideas—that impossibility of *fixing the attention* of the patient *long enough* to obtain a reply to the most simple question—that total loss of understanding in the constant hurry and crowd of thoughts—that over excitability of the passions, and that excessive violence of them when excited—which, according to M. Pinel, constitute the most striking phenomena of mental derangement or madness. An *excess of sedateness or contemplation* would naturally give rise to all the peculiarities of monomania—inducing that intense attention to one subject or idea until it acquired the vividness of a perception, and consequently came to be regarded as a reality, and so causing "that hallucination in which," according to the eminent authority before quoted, "the insane person is impressed with the belief of some unreal event as of a thing that has actually taken place, or in which he has taken up some notion repugnant to his own experience and to common sense, as if it were true and indisputable, and acts under the influence of this erroneous conviction"—which the illustrious physician above referred to enumerates as the distinguishing features of intellectual insanity, or monomania; while *an excess of lethargy* or *extreme sluggishness and indistinctness of feeling and conception*, could not fail to give rise to all the various attributes of idiotcy, namely, to that peculiar vacancy of expression—that utter listlessness—that total disregard or indifference to all external circumstances—that difficulty of recognition—that mental, as well as bodily inactivity and helplessness which, also, according to the same high authority, are the most prominent characteristics of demention or idiotcy.

These three forms of temperament, or grades of attentiveness, also agree in a great measure with those which, since the days of Hippocrates, have occupied so much of the consideration of physicians—the *sanguine temperament* in physiology being very nearly identical with that which I have called the *volatile*—the *melancholic* with what I have termed the *sedate*—and the *phlegmatic* with the *lethargic* of my classification. "The doctrine of temperaments," says Dr. Prichard, in his very luminous, learned, and intelligent dissertation on that subject, "is true to a certain extent, and has ever been confirmed by an appeal to experience. In order to be convinced of this," he adds, "let any person compare individuals who display the sanguine" (or, as I have denominated it, the volatile) "temperament in a high degree, with others who have strongly-marked signs of the melancholic" (or, according to my phraseology, the sedate). "There is no doubt," continues the doctor, "that among the *first* will be found many in proportion who have a *lively* and *cheerful temper*, great *sensibility*, and *excitable* if not *strong passions;* and among the *latter*, persons who are—if not sullen and dejected—(for such qualities are morbid extremes) yet *calm* and disposed to *serious*

reflection, rather than to *mirth* and *gaiety*. at the same time *tenacious of impressions* once excited, *and capable of fixed and steady attention*."

I conclude, therefore, that there are, constitutionally, different powers of attention in different persons; and since all intelligence depends upon the time or intensity of the attention devoted to the objects of thought or perception, that this difference in the power of attention must necessarily give rise to that difference in the power of intelligence, which is so evident in different minds.* Hence the next step in our discourse is, to apply the above conclusion to the art of teaching.

CHAPTER XVIII.

THE APPLICATION OF THE DIFFERENT POWERS OF ATTENTION TO INTELLECTUAL EDUCATION.

In the first place, then, it is evident, that in a proper system of education the subjects taught, as well as the mode of teaching them, should be adapted to the constitution and capacity of the pupil: for experience tells us, that to work with effect at any art, we must accommodate the circumstances to the nature of the substances employed, by removing—and certainly not by imposing—any thing which is at variance therewith. Now, the temperament of children being peculiarly volatile, restless, and exciteable, it is clear that the young cannot be capable of the same *intensity or duration of attention*—nor yet qualified for the same *sedentary pursuits*, as those of a more advanced age, and consequently of a more sedate disposition. We should, therefore, instruct a child *in such matters only* as admit of being demonstrated by actual experiment with sensible things, and defer—until such time as the volatility peculiar to its tender age has subsided into the more contemplative habits of maturer years—all instruction upon subjects of an abstract, and, consequently, an abstruse character; for, abstraction being simply the intent contemplation of some one quality or property apart from the thing to which it belongs, it follows, that the study of abstract subjects must require an intensity of attention to which children, from the very form of their constitutions, cannot naturally be adequate. We should, however, not only instruct a child in such matters as admit of being demonstrated by actual experiment with sensible things; but we should do so *in such a manner* as to bring the matter to be taught before its mind in a novel and striking light, and by the frequent change of the subject of instruction, avoid that duration of attention to the same object which, from the restlessness peculiar to early life, cannot but be difficult and irksome to the young. We should also allow the child to repeat the experiments, illustrative of the subjects taught, whenever they are unaccompanied with danger, and so, by affording it some active employment, accommodate ourselves to that busy disposition or muscular irritability in children which naturally gives them a disinclination for all sedentary pursuits. By these means the studies of the young would be made to yield them the same excitement—interest—and occupation—as their games; for it is evident, if we adapt our mode of teaching to that love of novelty, variety, and action, which are the necessary consequences of the temperament appertaining to youth, there must be the same inducement for a child to learn, as it now has, to play.*

The next duty and object of the tutor should be, since there *are* particular temperaments or powers of attention appertaining to particular persons, to discover *the one* appertaining to *each* of the individuals whom he may have to educate—to ascertain whether the pupils be respectively of a *volatile and exciteable*—or of a *calm and sedate*—or of a *lethargic and callous disposition*, and to regulate his conduct accordingly. If they be naturally *volatile and exciteable*, it is evident that their *attention* would be *more easily roused*, but at the same time *more readily distracted*, than that of others—and consequently, that they would demand *greater care and vigilance* in the instruction of them, than those of a less susceptible nature; if naturally calm and sedate, their attention would be *less easily excited*, but *more readily retained* than that of others; and, if naturally *lethargic and callous*, their attention would be *roused only with extreme difficulty*—and hence these would require *greater pains and skill* to be devoted to the education of them, than those of a more lively and sensitive character.

From this, then, it appears, that to excite the attention is the primary object in teaching. Let us, accordingly, proceed to inquire into the mode of effecting it.

CHAPTER XIX.

THE MEANS OF EXCITING ATTENTION.

The word attention is derived from the Latin preposition *ad*, towards, and the past participle *tentus*, stretched out; and consequently signi-

* Locke makes the difference in the power of attention—or, what is the same thing—in the power of abstraction (for this is but the necessary result of that) to constitute the main point of intellectual distinction between Man and the brute.

* I scarcely need remind the reader, that the principles upon which the education of the young is at present conducted, are diametrically opposite to those above propounded. The subjects taught in our academies of the present day are of a *purely abstract nature*—such as orthography, grammar, the classics, &c.—while the mode of teaching them consists in compelling the pupil to go over and over the matter to be learnt, until, by the mere duration of attention to it, he has become acquainted with the order of succession among the words of which the task is composed. The pursuit, therefore, is necessarily of a sedentary nature, and the child consequently forced, while engaged upon it, to remain inactive frequently for hours together. To work with effect at any art, as was stated above, we must accommodate the circumstances to the nature of the substances employed, by removing, and certainly not by imposing, any thing which is at variance therewith. The art of education, as at present pursued, proceeds upon directly the opposite plan. It forces a poor little being, who is, by nature, all life, activity, and

fies the fact of being stretched out towards some person or thing, as in the attitude of listening or observing; by one of those corruptions, however, so common in our language, it has been made to stand for *the mental act which induces the attitude*, instead of the attitude itself. Attention, then, in its extended sense, signifies the act of contemplating—of carefully regarding, or dwelling upon a certain object; or, to speak more definitely, it is that state of mind in which our ideas have a disposition to flow in connexion with a particular subject.

Our thoughts succeed one another in the mind by certain laws or relations; and if we merely follow, instead of giving a direction to these, and so allow our ideas to wander where they list, they will present to us, on retrospection, the same maze and confusion as the vagaries of a dream. It is only when each idea is related both to that which precedes it, as well as to the object which originally suggested the series, that there appears to be any regularity or harmony among our conceptions. It is this relation or connexion of each successive thought with a particular object, which constitutes the state of mind called attention—or what is familiarly termed the contemplation of that object. How, then, is this state to be produced?

A knowledge of the laws of mind alone can tell us this; for when we ask how is a particular mental state to be produced, we inquire solely what other mental state invariably precedes it; and to note the order of succession among our various thoughts and feelings is, as I have before explained, one of the principal objects of mental science. Now mental science teaches us that our emotions alone give harmony to our ideas: it shows us that some vivid feeling must be excited in the mind, in order to induce a succession of thoughts in connexion with a particular object. Thus, to the emotion of surprise succeeds wonder, or a series of thoughts respectively related and inquiring into the circumstances which caused the surprise. The feeling of beauty, which the perception of certain objects induces in us, also disposes us to contemplate or dwell upon those objects longer than others. The mental absence, as it is called, of lovers, is likewise a familiar illustration of the tendency of the emotion present in the minds of those persons to fix the thoughts—or, rather, to make them rise wholly in relation to the object of their love. What mockery—nay, what callous cruelty would it be, to take a wife deep in sorrow for the loss of her partner, protector, and adviser, to witness the performance of some merry-andrew! and that merely because the thoughts it could not fail to suggest would be utterly discordant with her then state of mind. Indeed, it is only the natural tendency of our conceptions to rise in harmony with our prevailing emotions, that gives particular casts of thought to particular characters; it is this which leads the miser to be continually thinking of his gold, because the love of it is continually present to him.

It appears, then, that in order to induce attention, and so give the thoughts a relation to a particular object, some vivid feeling or emotion must be previously excited in the mind. Consequently, the next subject for inquiry is, how is this emotion to be excited?

CHAPTER XX.

THE MEANS OF EXCITING THE EMOTION NECESSARY TO PRODUCE ATTENTION.

This may be done in several ways. It may be effected either by the prospect of some pain or pleasure attached to the performance or non-performance of the required task—or by the remembrance of the gratification before derived from the study of something similar to it—or by the perception of some novel and extraordinary circumstance connected with it. We may be made to attend to a certain object, either from the fear of some punishment, or from the hope of some reward consequent on our ignorance or knowledge of that object—or we may be induced to regard a subject carefully from the recollection of the delight previously experienced on the contemplation of a subject similar to it, and the consequent desire and expectation of renewing that delight—or else we may be led to dwell upon and examine a particular thing or event from the novel and extraordinary character of its appearance or occurrence. These three constitute the whole of the incitements to attention or learning. Knowledge may be pursued either from the hope of some good, or the fear of some evil connected indirectly with the attainment or non-attainment of it: it may be pursued from the mere love of knowledge itself—from a sense of the good connected directly with the attainment of it. And it may also be pursued from a feeling of curiosity—from the astonishment created by the occurrence or appearance of some extraordinary circumstance or thing, and the consequent desire to obtain some knowledge respecting it—without any regard to the good or evil connected, directly or indirectly, with the attainment or non-attainment of it.

The next question, therefore, is, which of these incentives lends the most beneficial aid to instruction?

CHAPTER XXI.

WHICH OF THE SEVERAL INCITEMENTS TO ATTENTION OR LEARNING SHOULD BE USED AS A MEANS OF EDUCATION?

This can be answered only by showing the necessary effects of each. Let us accordingly commence by exposing the consequences attendant on the

excitement, to continue half the day in the same position, attending to the same subject—and that subject, moreover, one in which it cannot feel the slightest interest. How, then, can the process of instruction be otherwise than a work of tyranny on the part of the tutor—and of torture to the pupil?

first-mentioned incitement; namely, the hope of some good, or the dread of some evil connected with the attainment or non-attainment of certain knowledge.

CHAPTER XXII.

OF REWARDS AND PUNISHMENTS.

THESE are the great principles of education in our schools of the present day. The means generally resorted to is a prize or a flogging. I shall begin with the latter, because it is the more common, and certainly the more barbarous of the two. It shows the grossest ignorance of Man's nature. I know no two places where the principles of human action are *less* studied and known —and yet none where they should be *more*—than in our schools and prisons. The birch is the great intellectual preceptor in the one—the gallows is the grand moral teacher in the other: both are branches of the same tree—the rod, indeed, may be said to be made of the twigs from which the gibbet is grown. Man has yet to learn to have faith in the greatness of the nature of his fellow-man. He has still to be made to feel, that Plato is but Nero with his natural sympathies more strongly educed, and that Nero is but Plato with his native selfishness more fully developed. But the birch is even more wrong than the gallows. Allowing corporal punishment to be justifiable, still it is most unjust to ill-use a boy for not attending to his task. *To excite this attention is the whole and sole duty of the teacher; and if, from the want of a proper knowledge of the means, he fail in so doing, it is surely* HE *who should be made to suffer—for undertaking and receiving a certain sum to do that of the very first principle of which he shows himself to be utterly ignorant.** As an instrument of education, however, the birch is totally useless. The dread of it may direct the attention of the pupil for a while to the task, but it never can impress the matter, for any length of time, on the mind. That which we are forced to acquire through fear, we soon forget; but that which we learn with delight, lives in the brain for years. The rhymes learnt in the nursery are ever the greenest spots in memory's waste; whereas, the task taught at school soon fades from our recollection. But the birch is not only useless—it is positively pernicious as an instrument of education. It associates pain with that with which the Great Author of human nature has connected intense pleasure—the acquisition of knowledge; and so creates in the pupil an habitual aversion to all study and contemplation. Thus it does a greater wrong to the man than it does to the child; it plucks out the natural and instinctive love of knowledge which God has planted in his heart; it robs him of his noble birthright—his intellectuality; it strips the man from the animal, and leaves him a naked beggar, as it were, in happiness, with nothing but his mere brute appetites and passions to depend upon. But the use of the birch inflicts a still severer injury upon the moral, than it does upon the intellectual, being. It makes fear a principle of action, and thus breeds habits of cunning, lying, and hypocrisy in the child, which can hardly fail to grow and strengthen with the man; it evokes and cherishes all the evil and malevolent impulses of our nature—anger, hatred, revenge—and the dark swarm of black and savage passions that spring up like giants from the dragon's-tooth cruelty, and consequently crushes, in an equal degree, all those good and benevolent feelings that live and flourish on kindness; *nay, it violates the very first principle of all morality—that Man is sacred from injury—and thus it may be said to sow the seed of murder.**

Nor is the incitement to attention, by the prospect of a prize, less insane, though it certainly is somewhat less pernicious than the preceding. This is also the result of ignorance. Were the

* What would be thought of the dramatist who, on failing to create an interest in his drama, commenced abusing the audience for not giving it that attention which, were he better acquainted with the principles of his art, he would be able to command? Would not such conduct be looked upon as the very height of presumption or madness? Yet, about as rational is the course pursued by the teacher who, being unable to fix the mind of the pupil upon his task, proceeds to punish him for that which is a necessary result of his (the teacher's), rather than—as he would endeavour to make out —of the pupil's stupidity. And, as the dramatist who cannot excite an interest in his audience is driven with derision from the stage, so should the teacher who is unable to awaken the attention of his pupils, be expelled with indignation from the school.

* "As Man," says Mr. Wilderspin, in his book on "Infant Discipline," "comes into the world with a disposition to do that which is forbidden, it has been found necessary at all times to make laws to govern and even to punish him when he acts contrary to them; and who will deny the man a just reward who has done any act whereby his fellow-creatures may be benefitted? 'The hope of reward sweetens labour.' If, then, rewards *and* punishments" (*or* punishments, it should be, for Mr. W. has not shown that *the two conjoined*) "are necessary to make men active, how can it be expected," he asks, "that children can be governed without some kind of punishment?" Let it be allowed, then, that *either rewards or punishments* are necessary to make men active—which is certainly *all* that even the most strenuous advocate of the selfish system could undertake to prove—and it follows, as a matter of necessity, that to have recourse to both, when one is sufficient to attain the end, is unwise; while to adopt punishment rather than reward, as a principle of action, is to adopt a means whose effect is only temporary. Punishment never can work a permanent cure. It may deter the individual for a while from *openly* repeating the act for which he has been punished, but it never can remove the *desire* to repeat it; *because it does not appeal to that desire, but merely to the exercise of it.* To permit the desire, therefore, to remain, and to connect punishment with the exercise of it, is a sure means of producing cunning, lying, and hypocrisy; for these are but the forms which the intellect of the individual invariably assumes when seeking to attain a particular good or object of his desire, free from a particular evil, which he knows to be consequent on the detection of his attainment of it. To eradicate a vicious propensity, we must apply ourselves to that false notion of happiness and vague perception of good which is the *cause* of it, and not to the exercise of that propensity which is the mere *effect* of it; for if we endeavour to controul the effect and yet allow the cause to remain undisturbed, it is evident that we must compel the individual to resort either to deceit or force, in order to avoid or overcome that which is in direct opposition to the gratification of his desires. Indeed, we have but to remember that what are styled the evil or malevolent feelings of our nature —such as anger, hatred, revenge, &c.—are the necessary consequences of injury—to perceive the *folly of punishment;* and to bear in mind that those which are denominated the benevolent emotions—such as love, gratitude, esteem, &c.— are the natural results of sympathy—to be equally alive to the *wisdom of kindness.* How much longer is it to be before men become sensible of the beauty of the Christian doctrine, and seek to make love, instead of fear, the principle of action!

teacher himself capable of perceiving, and then of making the pupil perceive, the beauty of the knowledge he was inculcating, it is certain that the mere pleasure attendant on the perception of that beauty would be a sufficient reward—and the remembrance of that pleasure, and the consequent desire and expectation of renewing it, a sufficient stimulus to the attention of the student for the future. To be able to do this, however, the teacher must be intelligent as well as learned; he must know not only the sense and construction of the dead languages, but also something respecting the sense and construction of the living mind upon which he has to operate. It is the want of this knowledge, and the consequent inability to excite this feeling, that forces the teacher to attach some extrinsic reward to the lesson, as an incentive to the attention of the pupil. Now, the attachment of this extrinsic reward does a double wrong to the scholar.* It teaches him, in the first place, that there is a greater prize than the acquisition of the knowledge itself. It says to the young inquirer, as plainly as it can speak, that study and contemplation are dull, irksome, and unprofitable things in themselves, and that this is a reward for doing that which is naturally unpleasant and repulsive. A child should be taught to seek knowledge for the beauty of the thing itself.* He should be made to feel that there can be no higher premium for the pursuit of truth, than the intense happiness which God has linked with the discovery of it in the mind, and certainly he should not be given to imagine that a silver-medal, a gold-pen, a picture-book, or some such trumpery, is the chief thing to be gained by it. Moreover, this prize-giving system cannot fail to develope among the pupils feelings of jealousy, envy, and all those hateful and malignant passions which necessarily arise on any interference by others with the gratification of our desires. It breeds habits of selfishness, and rivalry in and among those with whom we should endeavour to educe and cherish only sympathy and love.

* The attachment of extrinsic rewards to certain acts is a system which must in every case be productive of the most injurious results. By making the reward extrinsic, such as gifts of money, toys, fruit, cakes, &c., we establish the attainment of such things as the grand motive to action with the party rewarded, and so give rise to an overwhelming selfishness in his disposition, together with all its concomitant evils—we teach him to look for a like reward to all his other acts, and, consequently, to require a similar stimulus before he can be induced to move for the future. An apt instance of the evil of this system is given by Mr. Wilderspin, in his work before quoted. "I have seen others," says he, in speaking of the habits of different children, "who, when they first came to school, would begin to scream, as if they were being punished, as soon as their mother brought them to the door. The origin of all this noise has been, perhaps, because the child has demanded a halfpenny as the condition of coming to school, and the mother probably has not had one to give him, but has actually been obliged to borrow one, in order to induce him to come in at the school-door. I have sometimes made my appearance at this time to know what all the noise was about, when the mother has entered into a lamentable tale, telling me what trouble she had with the child, and that *he would not come to school without having a halfpenny each time.*" But, it may be said, that the system of rewards and punishments is of divine origin, having been established by the Creator for the production of action in Man, and that from the foregoing observations I appear to object to the donation of rewards as strongly as to the infliction of punishment. My objections, however, are confined solely to what I have denominated *extrinsic* rewards and punishments—meaning thereby, such pains and pleasures as *do not naturally appertain* to the acts with which they are connected. I object to these principally, *because* I sincerely believe that the Creator has attached to our every act an *intrinsic* reward or punishment—that is, a particular pain or pleasure which *does naturally appertain* to it; and that for Man to endeavour to add any other incentives to action, instead of seeking to develope those which have been ordained by God, appears to me to be a piece of presumption which is as insane in its design as it is injurious in its results. And I object to these, moreover, because I am convinced that, if we would but render apparent to the agent the consequences of his actions—if we would only demonstrate to him the happiness which the All-wise Constructor of the mind has established as consequent upon the exercise of our benevolent impulses—the gratitude, the love, the esteem, the consolation, *which are the natural and intrinsic rewards of any good act*, and the miseries which he has instituted as incident to the gratification of our malevolent ones—the hatred, resentment, indignation, contumely, and remorse, *that are the natural and intrinsic punishments of any evil one*—if we would but *do* this, I believe that motives could not fail to be given to the pupil which would be found not only to have far greater influence upon his future conduct, but to be of far greater benefit to his moral constitution, than all the tortures or treats which human ingenuity could devise.

* But it will doubtlessly be said, are children capable of being made to feel the beauty of knowledge? To this I answer, that the delight they exhibit on witnessing the representation of the shadow of the rabbit on the wall—the imitation of the crowing of a cock, or any other species of agreement which they can perceive, are all indisputable proofs of their capacity in this respect. For in the perception of such agreements, I have repeatedly shown that true knowledge alone consists; while beauty is the feeling which invariably attends their discovery: indeed, if we will but reflect, we shall find that those employments which, under the present system of education, the child can pursue now only as pastimes, are most of them scientific operations. Is not the flying of his kite an experiment in pneumatics—the explosion of his tiny cannon an experiment in chemistry—the sailing of his little boat an experiment in hydrostatics—the exhibition of his magic-lantern an experiment in optics? and is there any reason for believing that he would feel less delight in being shown, *by like experiments, why* his kite flew—the gunpowder in his cannon exploded—his boat floated—or the magic by which his lantern displayed its pictures on the wall? Do not his questions every day rather teach us that this is a continual source of inquiry, and an object of desire with him? Yet, despite all this love and craving for real knowledge in children, we shut the door upon their inquiries, and force them to learn that certain figures stand for certain simple sounds or letters, and a certain conjunction of those figures for certain complex sounds or words—a task which cannot but be irksome and difficult for them to acquire, because the connexion is arbitrary—there being no agreement between the figures and sounds connected—and a task which, even when acquired, will leave them as ignorant of Nature, Man, and God—as unconscious of the means of producing their own happiness, and of a desire to promote the happiness of their fellow-creatures, as the lowest animal that crawls. The only real difference between the mental powers of the child and the man lies, as I have shown, in the faculty of attention, and this difference will necessarily give rise to a greater difficulty of protracted attention to the same subject on the part of the child—as well as a smaller capacity for the abstraction or minute attention required to detect the more abstruse agreements of things—and, consequently, to a desire for more varied and practical pursuits. And yet we compel a poor little creature, in defiance of this primary law of its constitution, to remain for hours each day poring over those subtle relations of ideas or speech, which are treated of in that most abstruse part of all metaphysical studies denominated grammar. Indeed, the whole of the subjects taught in our schools of the present day, being of a *purely abstract* kind, we cannot wonder at the general distaste of children for their tasks, and that it should have been found necessary to invent rewards and punishments to coax and compel them

CHAPTER XXIII.

OF THE PURSUIT OF KNOWLEDGE FOR THE MERE LOVE OF KNOWLEDGE ITSELF.

DIRECTLY opposed to the preceding principles, as incitements to attention or learning, stands the pursuit of knowledge for the mere love of knowledge itself. In the sixth chapter of this treatise, I

showed that intelligence was the source of all science—the fountain of all knowledge; that intelligence was the act of perceiving the agreements of things; and that beauty, in its intellectual character, was the feeling consequent on intelligence—the vivid delight resulting from the novel perception of those agreements. Hence it is evident that all real knowledge must be beautiful. I have also shown, in the fifteenth chapter, that the power of perceiving those agreements is naturally the same in all persons, at all ages; but that it is modified by the various powers of attention among men, and so made to appear different in different people at different periods of life. Hence the beauty of knowledge is capable of being felt by all, provided we can excite their attention to it. Here, then, is the natural and proper reward of study—a reward conferred by the Great Designer of human nature in the construction of our various faculties and feelings, and conferred by Him alike on all—a reward, too, which, in the general desire to obtain it, creates no jealousy, and, moreover, no envy when obtained; but to gain which is rather to gain also the love, esteem, and sympathy of those around us—and a reward which, far from serving to cherish any selfish principle of our nature, tends to develope only our most generous feelings, and to make us long for some congenial soul with whom to share the boon; for who, when smitten with the beauty of a new and noble truth, has not yearned for some kindred bosom to enrich and gladden with the great discovery!

CHAPTER XXIV.

OF CURIOSITY, AND ITS CAUSE.

I now come to the consideration of the last-mentioned incitement to attention or learning—a feeling of curiosity. This, as I said before, differs from the two preceding, insomuch as it pays no regard either to the good or evil connected, directly or indirectly, with the knowledge to be gained.

The word curiosity is derived from the Latin verb *curare*, to cure, take care of, or *attend to*, as we do to the sick; and is therefore, in its original signification, equivalent to the present meaning of the word attention. Like that term, however, its original signification has been corrupted, and it is now made to express *the feeling which induces the attention*—viz., the desire to know something connected with a certain subject. Curiosity, we perceive, then, is simply the cause of attention. Let us, however, endeavour to ascertain what is the cause of curiosity—let us try to discover what other feeling invariably precedes that of curiosity in the mind. It is, then, in the first place, almost self-evident that we never desire to know anything concerning a subject with which we are thoroughly acquainted: this, indeed, would be seeking to know that which we know already; and so existing in a state of desire and satisfaction concerning the same subject at one and the same time—which is impossible. It follows, therefore, that in order to have a feeling of curiosity respecting any subject, we must first be ignorant of that subject. Now, if we are ignorant of a certain thing or event—if we know nothing concerning it, it is clear that its appearance or occurrence must be novel or unexpected to us; and that which is novel or unexpected, cannot fail of exciting our surprise when first made known to us; and this surprise will naturally give rise to our wonder, or a feeling of perplexity in us respecting the nature or origin of the object which surprised us; and this wonder or feeling of perplexity to our curiosity, or a lively desire on our parts to know something concerning that object. The feeling of curiosity, then, it appears, is induced by that of wonder; wonder by that of surprise; and surprise by the appearance or occurrence of some novel or unexpected thing or event. Or, to follow the process in the mind more minutely, something entirely new is presented to us—something of whose existence we have never heard, nor could have conceived; or some extraordinary event occurs to us—some event which we did not expect, and which, in the common course of things, we could not have expected to have happened; and we are instantly surprised, either at the appearance of a thing so totally different to all we have known, heard, or conceived, or else at the occurrence of an event so perfectly contrary to all our experience and expectations. We then grow perplexed at the extraordinary character of the thing or event. It is either so utterly unlike all we have seen, or so diametrically opposite to what we should have anticipated, we can refer the thing to no class—the event to no cause; *we wonder what* the one can be—*how* the other could have happened: and this wonder, perplexity, or state of mental uneasiness, naturally gives rise to a desire in us to know something concerning the objects of our surprise. Accordingly, we feel a curiosity respecting the nature of the first, the origin of the second; and we are consequently anxious to attend to the different qualities of the one, or the various circumstances of the other, so as to discover what other known qualities or circumstances they agree with, and thereby to ascertain the *genus* or *cause* to which they are referable.

This I believe is a faithful account of the states of mind attendant on curiosity; and I think we may, therefore, safely conclude that novelty of nature or effect is the cause of surprise—surprise the cause of wonder—wonder the cause of curi-

to acquire that which is at war with the very first principles of their natures. Nor can we, on the other hand, expect that these demoralizing incitements will be abandoned, until the present plan of education be entirely reversed, and the teacher seek to instruct the child in such things only as it can comprehend—beginning with the tuition of experimental, and consequently *practical* philosophy, where we now end—and ending with those more abstract studies, orthography, grammar, and composition, where we now begin.

osity*—curiosity the cause of attention—and attention the cause of intelligence. Here then is, as it were, the pillar of wisdom: surprise and wonder constitute the base—curiosity and attention the column—and intelligence the capital. "In wonder," says Coleridge, "all philosophy began—in wonder it ends—and admiration fills up the interspace. The first wonder was the offspring of ignorance—the last is the parent of adoration."

CHAPTER XXV.

OF THE USES OF THE FEELINGS OF SURPRISE, AND WONDER, AND THEIR IMPORTANCE AS PRINCIPLES OF EDUCATION.

THE importance of our susceptibility of the emotions of surprise and wonder at things novel or unexpected, as a part of our mental constitution, it has been truly said, is very obvious. "*It is in novel circumstances that it is most necessary for us to be upon our guard; because from their very novelty we cannot be aware of the effects that attend them; and we require, therefore, more than usual caution where foresight is impossible. But, if novel circumstances had not produced feelings peculiarly vivid, little regard might have been paid to them, and the evil, therefore, might have been suffered before the alarm was felt.* Against this danger the benevolent Contriver of the mind has providentially guarded us. *We cannot feel surprise without feeling more than ordinary interest in the objects which have excited this emotion, and a consequent tendency to pause till their properties have become in some degree known to us.* Our astonishment may thus be considered as a voice from that Almighty Goodness which constantly protects us—that, in circumstances in which inattention would be perilous, whispers, or almost cries out to us, "Beware!"

Now take away from these emotions this tendency to make us pause over new objects till their properties have become in some degree known to us; or, what is the same thing, deprive our feelings of surprise and wonder of their EDUCATIONAL *tendency, and they are* UTTERLY USELESS *to us. We cannot conceive them given to us for any other purpose than to interest us in the nature of things, because there is no other object to which they are applicable.* I CONCLUDE, THEREFORE, THAT THE EMOTIONS OF SURPRISE AND WONDER ARE GIVEN TO MAN BY

* The emotion of surprise is *not always followed* by that of wonder. If a person, of whose presence we have received no previous intimation, slap us suddenly upon the back, we are instantly surprised, but do not wonder at the circumstance; for the cause of our surprise is here immediately apparent to us, and wonder is simply that state of *amazement*, or feeling of perplexity, which ensues when *the cause or nature* of the circumstance which induced our surprise is *not immediately apparent* to us: so that it is evident that, in the above instance, no such feeling could occupy the mind. If, however, a friend, whom we imagined to be in another quarter of the globe, were suddenly to make his appearance before us, we should not only be surprised, but, perceiving *no reason* for his return, the surprise would immediately be succeeded in our minds by a feeling of wonder, or perplexity, as to the *cause* of that return. Nor does the emotion of wonder appear at first sight to be *invariably preceded* by that of surprise. I wonder, but am not surprised, at the budding and blossoming of a flower; for this is neither a novel nor unexpected event to me; and surprise is simply that vivid feeling which arises in the mind on the occurrence of an event, which is contrary to our experience or expectations: hence, it appears that, though we may be seized with a feeling of wonder at what is ordinary and familiar, still this feeling cannot in such a case be preceded by that of surprise. We wonder at that for which we cannot account—we are surprised at that which we did not anticipate. And yet it will be found, upon reflection, that our wonder, even at the most ordinary and familiar circumstances, is not altogether unconnected with surprise; for if ordinary events be wonderful to us because we cannot divine their causes, or, in other words, because we cannot discover the circumstances of which they are a necessary consequence, then it is clear that, being unacquainted with those circumstances which would naturally lead us to *anticipate* such events, we cannot be otherwise than surprised at their occurrence. Thus, to take one of the most ordinary examples, the falling of a stone to the earth is not only wonderful, but it is, if we consider it, notwithstanding its ordinariness, no less surprising an event; and that solely because we are ignorant of the cause from which it necessarily proceeds. To say that it is gravitation, is merely to say that the stone gravitates, *i. e.*, that it *does* fall to the earth. But what is the cause of this gravitation? It is the difficulty of solving this question that makes the event wonderful; and the consequent impossibility of anticipating its occurrence, *a priori*, that makes even the most ordinary circumstance, if we will but reflect upon it, as surprising as the most extraordinary phenomenon in nature. The surprise, however, in this and similar cases, is less sudden, and consequently less striking than in those where, from the immediate opposition of its object to our previous conceptions, it naturally becomes more vivid, and, therefore, more perceptible to us. The connection of the feelings of surprise and wonder with that of curiosity is far more simple and obvious. Wonder, as I before explained, is the feeling of perplexity or mental uneasiness, which results from our inability to discover the cause or nature of that which has surprised us; while curiosity is merely that desire for information which is a natural consequence of our perplexity or uneasiness concerning the extraordinary character of the object of our surprise. We are surprised at the appearance of a certain thing, or the occurrence of a certain event. We are so surprised, because the thing or event is directly opposed to our previous conceptions or expectations. It is this sudden opposition or check to the current of our ideas which gives rise to that slight electric shock, as it were, or lively and instant emotion, which constitutes the feeling of surprise. If the thing or event which induced this feeling do not then suggest to us some other thing or event which agrees with it in appearance, or invariably precedes it in occurrence, our surprise immediately subsides into that state of perplexity, or mental uneasiness, as to the nature or cause of its object, which constitutes the feeling of wonder. "If," says Dr. Adam Smith, "we can recollect many objects which exactly agree with the new one in appearance, and which present themselves to the imagination" (or, more correctly speaking, are suggested to us), "naturally, and as it were of their own accord, our wonder is entirely at an end" (or, rather, we do not wonder at all). "If we can recollect none" (*i. e.*, if none are suggested to us), "and we are consequently quite at a loss" (concerning its nature or origin), "our wonder is at the greatest possible height." It is the non-suggestion of any thing or event which agrees with the object of our surprise in appearance, or which invariably precedes it in occurrence, and our consequent inability to refer it to any *genus* or cause, which occasions that feeling of perplexity, or mental uneasiness, which constitutes the state of mind called wonder. And it is this perplexity, or mental uneasiness, which gives rise to that desire for information, and anxious enquiry concerning the circumstance that surprised us, which are the essential attributes of a feeling of curiosity. Thus, to take an instance which is familiar to the mind of every one. What was it but the unparalleled atrocity—the inconceivable inhumanity of that murder which has cast so foul a stain upon the annals of 1837—what but the direct opposition in which it stood to all we had previously known, or could have imagined of man in a civilized state, that on its discovery startled the entire nation as one being, with a feeling of surprise to be equalled only by the horror and indignation that accompanied it? To what mind could any cause be suggested sufficient to account for so monstrous an act? and perceiving no adequate cause, who could help wondering and feeling perplexed as to the motive which could have induced a being possessing the same nature as ourselves, to become the perpetrator of a crime which we sickened even to contemplate? Excited then by this wonder, or perplexity, was is not natural that the whole country should have yearned, as it did, with curiosity, and displayed an overweening desire to become acquainted with the most minute circumstance that could throw the faintest light upon so dark and dreadful a mystery?—even though the gratification of this desire involved an attention to all that was most loathsome and repulsive to our nature.

GOD, SOLELY FOR THE PURPOSE OF EDUCATING HIM; *and, consequently, that in a right system of teaching, these two feelings should be first excited in the pupil, as the most natural—the most ready—and the most powerful of all incitements to learning.*

SURPRISE, WONDER, and LANGUOR!—these are the three EDUCATIONAL EMOTIONS inherent in all men; for, with that lavish benevolence which is so conspicuous in the construction of the mind, we are endowed, not only with feelings of surprise and wonder, so as to arrest our attention towards what is new, but also with the feeling of languor or weariness, so as to give us an aversion to the repeated perception of what is old and familiar to us. *Now these feelings have been so beautifully and benevolently adapted to our intellectual necessities, that they are not only the most easy of excitement, but the most vivid when excited in those minds where there is the greatest deficiency, and, consequently, the greatest need of knowledge. Surprise and wonder* at what is novel or unexpected, are emotions which every one must have remarked to be *peculiar to ignorance*; for where the experience is less, it is evident that there must necessarily be greater novelty among the various appearances of things: while *languor or weariness* at the repeated perception of what is old and familiar, or the uneasiness which arises from long and constrained attention to the same object, we all must have observed to be a feeling which is *particularly excitable in childhood*—at which period, as I before explained, there is naturally, from the temperament peculiar to that age, a greater difficulty of fixing the attention, coupled with greater ignorance—and, consequently, *a greater necessity for more varied and general observation—than at any other time of life.*

The means of exciting these feelings of surprise and wonder in an uneducated mind are exceedingly simple. We have only to lead the pupil to expect a particular result—a result conformable with his limited experience—and then to disappoint his expectations by showing him some other result which is at variance with that experience, not only to produce in him a feeling of astonishment, but also to set him speculating in his own rude manner, as to the cause of the result which astonished him. "For it is when we have anticipated any event with confidence, and our anticipation has been disappointed by some unexpected circumstance, that the astonishment rises in our minds with more or less vividness of feeling, according to the strength of the belief which the expectation involved."

Of the *pleasure as well as impressiveness* of this mode of learning,* *the fairy tales and romances*, which are read with such delight in childhood—and remembered with much of their original charm in sober manhood—and not altogether forgotten nor disregarded even in grave and oblivious old age, and which are almost all appeals to our love of the marvellous, may be cited as apt illustrations; not only of the gratification afforded to the pupil, and the additional impressiveness given to any subject when it is made to excite our astonishment, but also of the *peculiar appropriateness* of this mode of instruction with *children*,*—among whom, as I have before explained, the natural love of the surprising is more fully developed than at any other period of life.

CHAPTER XXVI.

OF THE MODE OF GRATIFYING THE CURIOSITY.

HAVING explained the feelings which should be educed as incitements to attention, or learning, I now proceed to the consideration of the next question in my inquiry—namely, the mode in which the subject of that attention should be presented to the pupil; or, in other words, how the matter required to be learnt should be conveyed to his mind. As yet we have only arrived at the first step in the science of teaching—namely, a knowledge of the means of creating in the scholar a desire to be

* As an additional instance of the impressiveness as well as the efficacy of the principles of surprise and wonder, as incitements to attention or learning, I must refer the reader once more to the account given by Ferguson, the self-taught astronomer, of the circumstance which first directed his faculties to the study of Mechanical Science. "My taste for Mechanics," he says, "arose from an odd accident. When about seven *or eight years* of age, a part of the roof of our house being decayed, my father, desirous of mending it, applied a prop and lever to an upright spar, to raise it to its former situation; and, to *my great astonishment*, I saw him, without considering the reason, lift up the ponderous roof as if it had been a small weight. I attributed this at first to a degree of strength that excited my terror *as well as my wonder*." This naturally led him to think farther of the matter, until at length he found the means by which, to use his own words, "the seeming wonder" was effected; whereupon he was so delighted, that he set to work constructing levers of all descriptions; and, by applying weights to them, in different ways, ultimately discovered the whole of the laws relating thereto. "I then wrote a short account of these machines," he goes on to say, "imagining it the first treatise of the kind that was ever written; but found my mistake afterwards, upon showing it to a gentleman who told me that these things were known long before, and showed me a printed book in which they were treated of. And *I was much pleased*," he adds, "*when I found that my account (so far as I had carried it), agreed with the principles of mechanics in the book he showed me;* AND FROM THAT TIME MY MIND PRESERVED A CONSTANT TENDENCY TO IMPROVE IN THAT SCIENCE." So that we are here furnished with a notable example of the influence of the emotions of surprise and wonder as principles of education. The *astonishment* created by *one* trivial circumstance in the mind of a boy of between *seven and eight years of age*, having shaped the course, and *moulded the intellectual character of the being through the whole of his after life!*

* But I have been asked, "Are these principles capable of being applied to all the various branches of knowledge?" That they are, I have not the least doubt: but the application of them thereto forms no part of the object of the present treatise, which is of a *scientific* rather than an *artistic* character—*i.e.*, to *deduce the principles* of education, rather than to *explain the mode of applying* those principles to the different subjects of that art. The latter object I purpose proceeding with at the earliest opportunity. In the interim, however, I leave the undertaking to those who may agree with me concerning the efficacy of the principles above propounded. For the present, I can give but one illustration of the mode in which I conceive they should be applied to the different subjects to be taught—that illustration I have purposely made to bear upon a proposition in Euclid; because there appear to me to be greater difficulties connected with the tuition of the mathematics than with any other branch of knowledge. Suppose, then, I wish to teach a child the fourth proposition in Euclid, viz., "that if two triangles have two sides of the one

taught that which the master desires to teach. This is, assuredly, a very important point to know; for, without this, education can be only a system of most barbarous tyranny on the part of the tutor, and of bitter suffering to the pupil—deprived of this stimulus, it can but render that with which the benevolent Creator has connected so much happiness in the mind, and to which, for the mere pleasure derivable from it, those whom we call philosophers willingly devote their whole lives—the acquisition of knowledge—an object of aversion and disgust to the student. The means of preventing this—of producing in the pupil a desire to learn that which we desire to teach, is, therefore, a very important point to ascertain. To excite the curiosity, however, is only one part of teaching—to gratify it is another—and these two, it is evident, make up the whole *art* of education. Having, therefore, settled the means of effecting the former, I now proceed to point out the mode of attaining the latter object.

The gratification of curiosity means, simply, the acquisition of certain knowledge which we were desirous of obtaining. The subject for our consideration at present, is, therefore, the mode in which the pupil should be made to acquire that knowledge which we have given him a desire to obtain.

CHAPTER XXVII.

HOW THE PROCESS OF ACQUIRING KNOWLEDGE MAY BE RENDERED AGREEABLE OR DISAGREEABLE TO THE STUDENT.

THE process of acquiring knowledge may be agreeable or disagreeable, according to the *time* required for the acquisition of it—that is to say, according as the knowledge we desire is *immediate* or *remote*. All desires, as I said before, are states of mental uneasiness, which gradually *increase* in intensity or pain, according as the gratification of them is protracted. The protraction of the gratification of curiosity, or what is the same thing, the withholding certain knowledge from us which we are desirous of obtaining, gives rise to the state of mind called *suspense;* and of the pain attendant on this state, every one must be well aware. "Hope deferred," says the scriptural proverb, "maketh the heart sick."

The process of acquiring knowledge may also be agreeable or disagreeable to us, according as the intermediate circumstances appear to us to be, or to be not, *connected* with the object of our curiosity. It is the apparent want of this connexion between the subject and matter of certain works, which renders the study of those works so difficult and tedious; and it is the seeming discrepancy of others in this respect that makes them appear contemptible, if not disgusting to us. These effects, however, are but the necessary consequences of the preceding law—for since the protraction of the gratification of any of our desires always tends to increase the natural uneasiness of those states of mind, it follows, that any circumstance which seems to interfere with, or promote their gratification, must necessarily be a source of annoyance or delight.

It appears, therefore, that in order to render the process of acquiring knowledge agreeable to the pupil, we should not only excite his curiosity, but

equal to two sides of the other, each to each—and if they have also the angles contained by those sides equal to each other—then they shall likewise have their bases or third sides equal—and their other angles shall be equal, each to each—and the two triangles shall be equal in every respect. This, according to the present mode of teaching, can be a work only of extreme drudgery; for there being no reason for the child to expect the contrary, it is no more extraordinary to him that the bases of the two triangles, in such a case, should be equal, than that they should be unequal; *and he has, therefore, no curiosity concerning the subject, and, consequently, no desire to attend to it.* To make the circumstance appear extraordinary to him, and so give rise to a desire in his mind to become acquainted with it, we must make it appear in some manner to contradict his experience, and thereby to disappoint his expectations. The question with the tutor then becomes, how is this to be done? The following is the simplest mode I can at present perceive:—

Farmer Jenkins had a triangular field, the hedges of which he had engaged John Brown to repair. Brown had finished and been paid for repairing two of the hedges, and on the occasion to which the story refers, had brought in his bill for mending the third. Farmer Jenkins cast his eye over the document, and then asked Brown whether he did not repair also the hedges of the adjoining triangular field, belonging to Farmer Giles. To this the labourer responded in the affirmative. "And the hedges at the sides of my field, if I recollect rightly," continued the farmer, "you said were each exactly of the same length as each of the two hedges at the side of my neighbour Giles' field." "They are, sir," replied Brown. "And there is a weathercock, you remember," proceeded Farmer Jenkins, "at the point where our two fields join one another, which shows that the hedges at the two sides of my field are just as wide apart as those at the two sides of Farmer Giles' field." "Precisely so," answered John Brown. "You repaired, too, I believe, the hedge at the bottom of my neighbour's field, did you not?" inquired the farmer. "I did, sir," was the reply. "What was the length of that?" asked Farmer Jenkins. "300 feet exactly, sir," returned John Brown. "And you say here, I see, that the hedge at the bottom of my field is 310 feet," said the farmer, referring to the bill; "is that right?" "It is, sir," responded John Brown. "Did you measure it?" inquired the farmer. "Yes, sir, twice over," the labourer replied. "And you are certain that the hedge at the bottom of my field is ten feet longer than that at the bottom of my neighbour Giles's field. "Quite certain, sir," was John Brown's answer. "Now, sir," said Farmer Jenkins, with warmth, "you are telling me a falsehood." Brown protested he spoke nothing but the truth. The farmer, however, assured him he was not to be deceived. He told him that either he had not measured it at all, or else he was endeavouring to cheat him, and had put down a length which he knew to be more than was really the fact. "Have *you* measured it then?" inquired John Brown. Farmer Jenkins confessed he had not. "How then can you tell the length of it, I should like to know?" said John Brown. "Very well, notwithstanding," returned the farmer. "What, tell the length of a thing without measuring of it! Well! that is likely!" exclaimed Brown, with a sarcastic smile. "Likely or unlikely," replied the farmer, "it is no more than the fact." "The fact!" echoed John Brown; "why every fool knows that it is impossible to tell the length of a thing without measuring of it." "Every fool may believe so," replied Farmer Jenkins; "but every wise man knows that it is no such thing, and that when two sides of one triangle are equal to two sides of another, and the two sides of the one are just as wide apart as the two sides of the other, then that the third side of the one shall be equal to the third side of the other." "Well, I should like to see how you make that out, any how," said John Brown. "You shall, sir," returned the farmer; "and let it be a lesson to you for the future, that it is far more impossible to prosper by lying, than it is to tell the length of a thing without measuring it."

Having now excited the surprise and wonder, and consequently the curiosity of the pupil, *and so created in his mind a desire to attend to that which we desire to teach*, we have only to take him regularly through the reasoning upon which the demonstration of the proposition depends, in order to confer upon him that *lively delight which invariably accompanies the discovery of a new and unexpected truth.*

that having excited it, respecting a certain subject, either we should proceed to gratify it directly by making him immediately acquainted with that subject; or (if that be not possible) we should do so indirectly, by instructing him only in those matters which are closely connected with it, and making him perceive and feel the closeness of such connexion. Now the acquisition of knowledge by these means cannot be otherwise than a source of intense delight to the student for two very simple reasons; first, because it gratifies, or tends to gratify a desire on his part, and this, from the very construction of the feelings within us, must necessarily be productive of pleasure; and, secondly, because all knowledge is the result of intelligence, and intelligence the act of perceiving the agreements of things, while beauty is the feeling of vivid delight consequent on the discovery of those agreements: it follows, therefore, that *the acquisition of knowledge must necessarily be beautiful, and a source of intense delight to the acquirer.* This is a point which appears to me to be so exceedingly clear and indisputable, that I do not hesitate to lay it down as an invariable axiom in education, that WHENEVER THE ACQUISITION OF A TASK IS DISAGREEABLE TO THE PUPIL, EITHER THE TASK IS UNFIT TO BE TAUGHT, OR THE TUTOR UNFIT TO TEACH IT.

One great difficulty attendant upon the study of Euclid arises from the indistinctness which necessarily accompanies the use of the letters of the alphabet as signs of distinction between the several lines and angles which are involved in the different demonstrations. There is but little apparent difference between the line A B and the line A D, and the angle A B C is to be distinguished only with difficulty from the angle A C B, or the angle B A C. The different lines and angles cannot by these means form lucid and distinct objects in the mind directly they are presented to it; and unless they do so, it is clear that the reasoning of the various problems and theorems can be followed by the pupil only with strenuous and irksome attention. Whereas, if some other means of distinction were used, such as lines of different colours, and the subjects of the several propositions so made conspicuous and definite, the demonstration would become both simple and plain; and the task, therefore, rendered a delight instead of being, as now, a drudgery to the student. The angle formed by the red and blue lines would be very easily distinguishable from that formed by the blue and yellow lines, and the green line as clearly different from the black. This system, I am told, has been adopted with great success by Mr. Oliver Byrne, the teacher of mathematics at the Deaf and Dumb Asylum.

Let me add one other instance of the efficacy of the feelings of surprise and wonder as principles of instruction in connexion with a subject in natural philosophy. Suppose that we wished to make a child acquainted with the principle of combustion—to give him a knowledge of the circumstances upon which the process of burning depends. This, according to the present mode of instruction with children, would be a work only of extreme difficulty and tediousness, nay, is commonly supposed to be next to impossible. It will be found, however, if we bring the circumstances before the pupil in such a manner as to contradict his experience and expectations, and so cause them to excite his surprise and wonder, and consequently his curiosity, that to instruct a child upon this or any other subject is neither so very difficult nor so very disagreeable a task. We should, then, in the first place, remind the pupil of what he has repeatedly observed—that a piece of iron-wire placed in the fire grows gradually red with the heat; and having done this, we should proceed to show him that, if to the end of the wire a slip of a common brimstone match be attached, the match lighted, and the wire introduced with it into a jar apparently empty, but in reality filled with an invisible air or gas called oxygen, the substance, which in the fire was capable only of being heated to redness, will burn with extreme rapidity, throwing off a quantity of small luminous particles with the most beautiful scintillations. Then, taking the same piece of wire, and applying to the end of it a similar slip of a match, we should go on to show him that, if the match be lighted and the wire introduced with it as before into another jar, also apparently empty, but in reality containing, like the other, an invisible air or gas, possessed, however, of very different properties, and called carbonic acid, that not only the wire will neither enter into combustion as it did in the other jar, nor become heated to redness as it was in the fire, but that even the match, instead of continuing to burn as it did in the open air, will be instantly extinguished. And, having shown the child these strange contradictions to his experience and expectations, and so excited his surprise, we shall find that he will begin to wonder, and express a desire to know what the two jars contain, and how it is that they produce effects which are not only so diametrically opposed, but also so directly contrary to those which occur in the open air. Whereupon, having raised this desire, we should proceed to gratify it by burning in a jar of atmospheric air, which we have previously weighed in his presence, a known weight of the metal called potassium; then weighing each of the products—showing him that the metal had not only, by the combustion, been converted into a totally different substance, and had now become identical in all its properties with what is called potash, but had actually increased sensibly in weight; while the air had not only been rendered incapable of supporting combustion any longer, extinguishing every burning body immediately on its being introduced into it, but had positively diminished just as much in weight as the metal had increased—and thus, by proving to him that the principle in the air, which enabled the body to burn, and to which chemists have given the name of oxygen, had entered into combination with the combustible, and by reminding him that this combination had been attended with a sudden and great evolution of light and heat, we could not fail to give the child a knowledge of what is, perhaps, as important a law as any in chemistry—that the process of combustion, or burning, is simply the rapid combination of the combustible with the oxygen of the atmosphere, attended with a sudden and great evolution of light and heat.

CHAPTER XXVIII.

OF THE PLEASURE DERIVABLE FROM THE ACQUISITION OF KNOWLEDGE.

"EVERY being," it has been truly said by the author of the admirable treatise on the objects, advantages, and pleasures of science, "every being is by Nature endowed with the power of gaining knowledge, and the taste for it—that is, the capacity to be pleased with it—forms equally a part of the natural constitution of his mind. It is his own fault, or *the fault of his education*, if he derive no gratification from it.

"That every being is capable of being delighted with extending his information on matters of science, will be evident from a few plain considerations. Reflect," continues the author of this beautiful little work, "how many parts of the reading, even of persons ignorant of all sciences, refer to matters wholly unconnected with any interest or advantage to be derived from the knowledge acquired. Every one is amused with reading a story: a romance may divert some, and a fairy tale may entertain others; but no benefit beyond the amusement is derived from this source; the imagination is gratified, and *we willingly spend a good deal of time and some little money in this gratification, rather than in resting after fatigue, or in any other bodily indulgence.* If it be a pleasure," proceeds the writer, "to gratify curiosity—to know what we were ignorant of—*to have our feelings of wonder called forth, how pure a delight of this very kind does natural science hold out to its students!* Recollect, some of the *extraordinary* discoveries of mechanical philosophy. How *wonderful* are the laws that regulate the motions of fluids! Is there any-

thing in all the idle books of tales and horrors more truly *astonishing* than the fact, that a few pounds of water may, by simple pressure, without any machinery, by merely being placed in a particular way, produce an irresistible force? What can be more *strange* than that an ounce weight should balance hundreds of pounds by the intervention of a few thin bars of iron? Observe the *extraordinary* truths which optical science discloses. Can anything *surprise* us more than to find that the colour of white is a mixture of all others—that red, and blue, and green, and all the rest, merely by being blended in certain proportions, form what we had fancied rather to be no colour at all, than all colours together? Nor is chemistry behind in its *wonders*. That water should be chiefly composed of an inflammable substance—that acids should be for the most part formed of different kinds of air—and that one of those acids, which can dissolve almost any of the metals, should consist of the self-same ingredients with the common air we breathe—that salts should be of a metallic nature, and composed chiefly of metals, fluid like quicksilver, but lighter than water, and which, without any heating, take fire on being exposed to the air, and by burning from the substance so abounding in saltpetre, and in the ashes of burnt wood—these, surely, are things *to excite the wonder of any observant mind—nay, of a mind but little accustomed to observe.* And yet these are trifling compared with the *prodigies* which astronomy opens to our view—the enormous masses of heavenly bodies—their immense distances—their countless numbers—and their motions, whose swiftness mocks the uttermost efforts of the imagination!

"Akin to this pleasure of new and extraordinary truths," adds the author, "is *the gratification of tracing resemblances and relations between things which, to common apprehension, appear widely different.* To discover such unexpected resemblances is, indeed, the object of all philosophy. It is surely a satisfaction to know, what is an undeniable fact, that the very *same* thing which makes the fire burn, makes metals rust—forms acids—and enables plants and animals to breathe; that these operations, so *unlike* to common eyes, when examined by the light of science, are the *same*—the rusting of metals—the formation of acids—the burning of inflammable bodies—the breathing of animals—and the growth of plants by night. Nothing can be *less like* than the working of a vast steam-engine on the old construction, and the crawling of a little fly upon the window; yet we find that these two operations are performed by the *same* means; namely, by the weight of the atmosphere—and that a sea-horse climbs the ice-hills by no other power. Can anything be more *strange* to contemplate? Is there in all the fairy tales that were ever fancied, anything more calculated *to arrest the attention, and to occupy and gratify the mind, than the* WONDROUS *structure of the heavens?* Is it not *in the highest degree interesting* to find that the power which keeps the earth in its shape and in its path, wheeling upon its axis and round the sun, extends over all the other worlds that compose the universe—that this *same* power keeps the moon in her path round our earth, and our earth in its path round the sun, and each planet also in its path—that the *same* power causes tides upon our globe, and the peculiar form of the globe itself—and that, after all, it is the *same* power which makes a stone fall to the ground? *To learn these things, and to reflect upon them, occupies the faculties, fills the mind, and produces* CERTAIN, *as well as* PURE, GRATIFICATION."

And, moreover, this is a gratification which extends alike to the contemplation of every other science, as well as to the study of the principles of every art. The discovery of those new and extraordinary truths or relations, which it is the peculiar province of science to unfold, cannot but be pleasing to the discoverer, because it excites his surprise, showing things which appear to be intimately connected to be diametrically opposed; while the apprehension of the new and unexpected resemblances which they reveal among things which seem to be widely different, cannot but be beautiful, because it is the perception of a novel agreement on which the feeling of beauty depends.

CHAPTER XXIX.

OF THE INTELLECTIVE AND RECOLLECTIVE MODES OF TEACHING.

Now the discovery of these agreements and differences appeals to the intelligence, for this is all that is meant by the term; and truth, beauty, and intellect, as I before explained, are its natural and certain rewards. The exposition of the agreements and differences of things to the pupil, appealing as it does to the intellect, may therefore be termed the *intellective* mode of teaching—in contradistinction to that other mode which instils a knowledge of particular successions of words expressive of certain facts, and which, appealing as it does only to the recollection, may therefore be termed the *recollective* mode of teaching. The latter process, which is the one in general use among our schools of the present day, *cannot but be a source of extreme pain and disgust to the pupil.* There is nothing so repulsive to the mind as any connexion which is arbitrary. When a number of words are associated without any regard to their sense, it constitutes what is commonly called gibberish; and of the unpleasant effect of being compelled to listen to, much less to learn, a quantity of this, every one must be well aware. The effect is the same when the sense is not rendered apparent to us; for that which we do not understand, must, it is evident, still be gibberish to our minds. If, therefore, the student be not made to comprehend the meaning of the series of words required to be learnt, it is clear that it cannot but

be an act of the most barbarous cruelty, to force a youth or child, who has not the same power of attention as ourselves, but is, on the contrary, all life, activity, and excitement, to do that which would be difficult and painful even for us to do. I will not say that this system is pursued in *all* our schools of the present day, but that it prevails in the majority, *and has rendered the use of the birch a matter of necessity among them—(for wrong breeds wrong)*—it needs not me to tell you. If, however, on the other hand, the pupil be made to comprehend the meaning of the series of words required to be learnt, there can be then no reason for compelling him to become acquainted with the arrangement of that series; for it is surely the *meaning*, and the meaning only, that we wish to impress upon his mind—not the mere *order* of the terms in which it is conveyed; and this may be done as well, nay, better, without any particular form of expression than with it. We remember facts with greater facility than we remember the verbal expression of those facts, for the very simple reason, because we have less to remember. If the pupil be impressed with a *sense* of the truth to be inculcated, it is clear that to add to this a knowledge of a particular mode of expressing that truth, can be only to clog and impede the memory; while, if the pupil be not so impressed with a sense of the truth to be inculcated, then it is equally clear that to make him acquire a knowledge of *the mere order of succession among so many senseless and unconnected words* (for such, in that case, they can but appear to him), *must be as useless and idle as it is barbarous and cruel.*

But the pain inflicted on the pupil by this manner of teaching, not only in the acquisition of the task itself, but also in dread of that disgusting instrument of torture, which is the natural and necessary consequence of the system, and the wrong, therefore, done to the student by making that irksome and repulsive to him, which the benevolent Contriver of the mind has rendered naturally pleasant and attractive to all, is not the sole, nor yet—great as it is—the greatest evil resulting from this mode of instruction. *It induces a habit of thought which is directly opposed to that of intelligence, and thus it weakens, if not destroys, the intellect*—or, as I said in the first chapter of this treatise, the present system of education, instead of tending to educe the powers of the young mind, serves only to impede and cripple their natural vigour and development.

In order that the reader may understand this fact, it is necessary that he should comprehend the different forms of mind, as well as the peculiar circumstances on which those forms depend. These I now proceed to explain.

CHAPTER XXX.

OF THE DIFFERENT FORMS OF MIND AND THE CIRCUMSTANCES ON WHICH THEY DEPEND.

By a form of mind, I mean the degree of intelligence displayed in the operations of that mind. There are three different forms of mind, or degrees of intelligence, appertaining to different men. There is the *ordinary* or *repetitive* form, in whose operations the *lowest* degree of intelligence is displayed. There is the *mediocre* or *adaptive* form, in whose operations a *greater* degree of intelligence is displayed; and there is the *extraordinary* or *inventive* form, in whose operations the *greatest* degree of intelligence is displayed. The first, or repetitive mind, is the characteristic of the man of *memory*; the second, or adaptive mind, of the man of *talent*; and the third, or inventive mind, of the man of *genius*.

That there are various forms of temperament, and various grades of attentiveness among mankind, it will be remembered I proved in the sixteenth chapter of this treatise; and I showed at the same time that these must necessarily give rise to different degrees of intelligence, and consequently to different forms of mind in different men. That the *genius*, the *adept*, and the *fool*, have then each a particular *bodily constitution*, to which their peculiar mental powers are *originally* referable, cannot, I think, but be evident to all; and that *genius*, *talent*, and *folly* are *in themselves*—that is *without reference* to the peculiar bodily constitution, which is their primary cause—*only so many different modes of conception, or particular habits of thought induced by particular circumstances*, I hope to be able to make equally evident; and, consequently, to show that *the system of education at present pursued in our schools can but tend to breed folly—instead of inducing, as a proper system should induce, talent—and fostering, as it should foster, genius.*

CHAPTER XXXI.

OF THE DIFFERENT HABITS OF THOUGHT APPERTAINING TO DIFFERENT MINDS.

By a habit of thought, I mean the general tendency of the ideas to follow each other in the mind by some prevailing relation. Our ideas succeed one another by certain affinities or relations. Each thought is found to suggest or give rise to that which immediately succeeds it, by certain regular laws, which are consequently termed the laws of suggestion.

The laws of suggestion are three—association, resemblance, and contrast. One thought suggests or gives rise to another, according as the subjects of those thoughts are associate, or connected in place, or in time—or according as they resemble or agree one with another—or else according as they are in contrast or directly opposed to each other. Thus, the remembrance of a certain thing or event

will suggest or bring to mind some other thing or event which is either connected with—or similar to —or different from it. Accordingly, to think of one part of a familiar landscape is generally to recall the parts that are contiguous to it; and to recollect a particular circumstance is frequently to recollect some other circumstances which were contingent to it; while to conceive of a certain object or occurrence is often to conceive of another which is either analogous or directly opposed to it. These three, —the association, resemblance, and contrast of ideas —are the only discoverable laws or relations by which one thought suggests or gives rise to another in the mind; and *it is therefore the general tendency of the ideas in a certain person to flow or succeed one another by either of these relations, that gives a particular form or character to the mind of that person.* Thus, in the *ordinary or repetitive* form of mind, the ideas generally succeed one another according to the relation of association—according as the subjects of those ideas are connected in time or in place. Hence, the thoughts rise in this form of mind in very nearly the same order as the perceptions originally entered it; *and hence this must necessarily be the most unproductive of all minds.* It can only recapitulate that which it has either known or heard. It merely disgorges, as it were, the different facts that have come under its experience. There is no intellectual digestion—no assimilation of ideas—no mental chyle, as it were, produced (to adopt the expression of my friend Douglas Jerrold)—and, consequently, little or no mental vigour. All is stale, flat, and unprofitable repetition and rote.

Now, that the system of education at present pursued in our schools must necessarily tend to engender this habit of thought, cannot, I think, but be evident, when we remember that the tutors there teach *only* by causing the ideas to succeed one another, according to the relation of association, that is, according as they are connected in time or place. A particular task is given to a boy to learn; this task consists of so many lines from a certain book; and the process of learning it, in the continued repetition of those lines, until the student has become so far acquainted with the order of succession among the words of which they are composed, that each of those words will suggest that which is immediately *contiguous* to it; which being done, the task is said to be learnt. It must, therefore, I think, be apparent, that *the mode of teaching at present pursued in our schools can but engender in the pupil a most unproductive and unintellectual habit of thought;* and, consequently, that instead of tending to educe the powers of the young mind, it serves, as I said before, only to impede and cripple their natural vigour and development.

Diametrically opposed to this habit of thinking, according to the mere association or order of the original perceptions—that is to say, of thinking *recollectively*—is the other habit of thinking according to resemblance or contrast—that is to say, of thinking *intellectively. It is the general tendency of the ideas to flow or succeed one another, according as they agree or differ, which forms the chief characteristic of the mediocre or adaptive, as well as of the extraordinary or inventive mind.*

To adapt is to arrange a certain thing, so that it will agree with the principles applicable to some other thing. Whereas, to invent is to discover and arrange a means for producing, with a particular cause, a particular effect, so that the means will agree with the principles to which the cause is applicable, as well as with those which are applicable to the effect. Invention is, then, as it were, a double adaptation; the adaptation of the cause to the means and the means to the effect. And as in the process of simple adaptation there is but one agreement perceived, so in the process of invention there are always two. *Here lies the grand distinction between talent and genius. Talent, which adapts, consists in the perception of a single agreement between two things; genius, which invents, in the perception of a double agreement between three.* It is the perception of this double agreement which alone gives greatness to all works, either of art or science. In reasoning, for instance, it is necessary not only that the major proposition of a syllogism should agree with the minor, but the minor also with the conclusion. In poetry it is essential not only that the thoughts which constitute the metaphors or similes should agree one with another, but that these should also agree with the nature of the circumstances in which they are introduced. In wit, it is requisite not only that the apparently incongruous ideas should be made to agree—for this single agreement of remote ideas constitutes, simply, humour—but, to remove it from that, they should likewise be made to agree with some object or design on the part of the author: as, for instance, in satire. In painting, too, it is necessary that the picture should agree not only with the scene which it portrays, but also with those principles of beauty, in form, colour, and composition, which constitute what is called the standard of excellence: while in music it is essential not only that there should be that agreement among the vibrations of successive and co-existent notes, which give rise to the feelings of melody and harmony, but likewise that these should again agree with the expression of some passion or emotion in man. It is the general perception on the part of the artist of but one of these agreements, which constitutes in him what we term a talent for the art—it is the general perception of the two agreements which marks what is called a genius for it. We may then, I think, safely conclude that genius and talent are in *themselves*—that is, *without reference to the peculiar bodily constitution which is their primary cause*—only particular habits of thinking—of thinking according to the agreements and differences of things.

To the philosophic or poetic mind, every object in

nature suggests some other which agrees or differs with it, either in appearance or effect; and it is only this peculiar mode of suggestion, or habit of thinking according to the agreements and differences of certain things, which distinguishes those minds, as of a philosophic or poetic character. Thus the falling of an apple—an event which had been present innumerable times before, not only to the perception of the observant, but even to the senses of the undiscerning—and which, if noticed, had awakened in their minds only such thoughts or feelings as had been previously associated with it either in time or in place—suggested to the vivid genius of Newton those striking agreements between things apparently so widely different, which led him to class the force which retains the planets in their orbits with that which occasions the fall of a feather to the earth; and thereby to divine the very mainspring, as it were, of the mechanism of the heavens. Everything was the same to him and to them, *except the peculiar habit of thinking*—the habit of thinking according to the agreements and differences of things—that is, of thinking *intellectively.**

Now that this habit of thinking is capable of being induced; and the talent which, in a greater or less degree, is inherent in all men accordingly developed and expanded—or the genius which is the noble birthright of a few cherished and encouraged—the education of aspirants for the liberal professions affords a sufficient proof. To instruct a person in chemistry is simply to create in him a habit of thinking according to those agreements and differences in the action of material substances, which it is the province of the science of chemistry to unfold. To educate a person for a physician is chiefly to teach him to think according to those agreements and disagreements between certain material substances and states of the human body, which constitute the principles of physic. And that this habit of thinking according to the agreements and differences of things is to be induced only by the exposition of those agreements and differences, surely it does not require a moment's consideration to perceive.

The tutor should, therefore, point out to the pupil the agreements or relations of things; and so teach him, either by the exercise of that talent which, to a certain extent, he possesses in common with all mankind, to adapt them to the explanation of some old effect, or to the production of some new one; or else by the exercise of that genius, which is his peculiar privilege, to discover new agreements, and adapt them to the performance of some unknown operation, or to the solution of some known one. To point out the agreements and differences of things, is to teach knowledge; for, in the perception of these agreements and differences, knowledge alone consists; and truth, beauty, and intellect, as I have before shown, are its certain and glorious rewards: whereas, to teach a mere succession of words, is to teach nonsense; for nonsense is only that in which there is *no* perceived agreement; and cruelty, disgust, and imbecility are its natural and bitter results. It is for the reader to choose between the two.

* See Brown on the Relation of the Philosophy of Mind to the Sciences.

CHAPTER XXXII.

OF THE MODE OF IMPRESSING THE MATTER TAUGHT UPON THE MIND OF THE PUPIL.

We now come to the only remaining subject for inquiry, viz., the mode of impressing the matter taught. We have already discovered two very important facts in the science of education—the mode of exciting curiosity—and the mode of gratifying it, so as to induce a habit of intelligence in the pupil. We have ascertained not only the means of producing in the scholar a desire to acquire certain knowledge, but also the means of conveying it to him in a manner calculated to develope and expand his intellect. We have still to ascertain what is equally important—the means of fixing that knowledge in the mind.

It is the permanence of knowledge that gives it its highest value. If truth, as I showed in Chapter X., had been made transient, and not eternal, Man would have been only an animal, and his boasted reason but a vain and superfluous endowment. Truths are the steps in the ladder of discovery. It is only by known truths that we are enabled to arrive at unknown ones. If we forget that which we are taught, it is clear that we must be in the same situation as if we had never been taught. Hence, to give value to the truths we teach, it is necessary that we should know the means of impressing them upon the mind.

This knowledge, mental science alone can confer upon us; for when we inquire into the means of impressing certain truths, we inquire solely into the circumstances which give to particular ideas a greater tendency than others to be suggested or reproduced in the mind; and it is the classification of these circumstances which constitutes what are called, in mental science, the secondary laws of suggestion—in contradistinction to those more general laws which are denominated the primary, and which I have just now explained.*

The secondary laws of suggestion are three; that is to say, there are three classes of circumstances which give a greater tendency to particular

* I have here adopted the division made by Dr. Brown, who has given a more full and minute account of the Laws of Suggestion than any other author with whom I am acquainted. Indeed, it is with him, I believe, that they chiefly originated. He divides the laws or relations, by which one thought or perception suggests another thought to the mind, in the first place, into those of simple and relative suggestion—the former constituting the laws of conception, the latter the laws of judgment.

"The intellectual states of mind," he says, "to give a brief illustration of my division, I consider as all referable to two generic susceptibilities—those of simple and relative suggestion."

Our perception or conception of one object excites of itself;

ideas than to others to be suggested by either one of the relations which constitute the primary laws. These three circumstances are the *liveliness—duration—and recency of the attention devoted to the original perceptions.* A particular thought is more ready to be suggested, according as our attention to the subject of it was originally more intense—or, what is the same, according

and, *without any known cause external to the mind*, the conception of some other object: as, when the mere sound of our friend's name suggests to us the conception of our friend himself; in which case the conception of our friend, which follows the perception of the sound, involves *no feeling of any common property* with the sound which excites it. This is simple suggestion.

"But," he continues, "together with this capacity of simple suggestion, there is a suggestion of a very different sort, which, in every case, involves the consideration, *not of one* phenomenon of mind, but of *two or more* phenomena; and which constitutes the feeling of agreement—disagreement—or relation of some sort. I perceive, for example, a sheep and a horse at the same moment. The perception of the two is *followed by that different state of mind* which constitutes *the feeling of their agreement* in certain respects, and *of their disagreement* in certain other respects. This is relative suggestion.

He then subdivides the laws of simple suggestion into those of primary and secondary. The primary laws being the relations by which the perception or conception of one object excites in the mind the conception of some other object, *without any feeling of the relation between those objects;* and the secondary laws being those circumstances which *modify* the influence of the primary in inducing *one conception rather than another in accordance with them.*

THE PRIMARY LAWS OF SUGGESTION are, according to Dr. Brown, those which I have before explained, viz., *the association* in time or in place—*resemblance*—and *contrast* of the OBJECTS of the ideas suggested; that is, the perception or conception of a certain object may suggest to the mind the conception of some other object which is connected with it—which bears some resemblance to it—or which is diametrically opposed to it. The sight of a picture, for example, can recal to us the artist who painted it—the friend who presented it to us—the room in which it formerly hung—the series of portraits of which it then formed a part—the person whose likeness it is—the works of some other painter, whose style it resembles—or of those of the school to which it is directly opposed, &c.

But if the sight of a picture can suggest to us *any one* of the above conceptions, in accordance with the primary laws, why, inquires the Doctor, does it suggest *one of them rather than another?*

The circumstances which induce this peculiarity, *by giving a greater tendency to certain ideas than to others to be suggested by the primary laws*, are what he denominates THE SECONDARY LAWS OF SUGGESTION: and they are *the duration—the liveliness—the frequency—the recency*, and *the purity* of the ORIGINAL PERCEPTIONS of the ideas suggested; and *the constitution—the temporary emotions—the bodily state—and the habits* of the INDIVIDUAL to whom they are suggested—or, in the words of the author, "The occasional suggestions that flow from the primary laws, on which our trains of thought depend, are various, according as the original perceptions have been—"

1st. OF LONGER OR SHORTER CONTINUANCE. "Thus," he says, "the longer we dwell upon objects, the more fully do we rely on our future remembrance of them."

2nd. MORE OR LESS LIVELY. "We recollect, for a whole life-time, the great occasions of joy and sorrow."

3rd. OF MORE OR LESS FREQUENT OCCURRENCE. "We remember, after reading them three or four times over, the verses which we could not repeat when we had read them only once."

4th. MORE OR LESS RECENT. "We are able to repeat any single line of poetry immediately after reading it, though we may have paid no particular attention to it. In a very few minutes, unless we have paid particular attention to it, we are no longer able to repeat it; and in a very short time we forget it altogether."

5th. MORE OR LESS PURE from the occasional and varying mixture of other feelings. "The song we have never heard but from one person, can scarcely be heard again by us without recalling that person to our memory."

6th. They vary according TO DIFFERENCES OF ORIGINAL CONSTITUTION. "To the cheerful, almost every object they perceive is cheerful as themselves; while to the gloomy, no sky is bright, no scene is fair."

7th. According to DIFFERENCES OF TEMPORARY EMOTION. "When Eloisa, in Pope's celebrated epistles, thinks of the invention of letters, the only uses which her train of thought suggests are those which are analogous to the circumstances of her own passion.

Heaven first taught letters for some wretch's aid,
Some banish'd lover, or some captive maid:
They live—they speak—they breathe what love inspires,
Warm from the soul, and faithful to its fires;
The virgin wish, without her fears, impart,
Excuse the blush, and pour out all the heart,
Speed the soft intercourse from soul to soul,
And waft a sigh from Indus to the Pole."

8th. According to CHANGES PRODUCED IN THE STATE OF THE BODY. "I need not refer," says Dr. B. "to the extreme cases of intoxication or actual delirium—to the copious flow of follies which a little wine or a few grains of opium may extract from the proudest reasoner. In circumstances less striking, how different are the trains of thought in health and in sickness, after a temperate meal and after a luxurious excess!"

9th. According to GENERAL TENDENCIES PRODUCED BY PRIOR HABITS. "When men of different professions observe the same circumstances—listen to the same story—peruse the same work, their subsequent suggestions are far from being the same. The most striking example, however, of the power of habit in modifying suggestion is in the command which it gives to the orator who has been long practised in extemporaneous speaking—a command, not of words merely, but of thoughts and judgments, which, at the very moment of their sudden inspiration, appear like the long-weighed calculations of deliberative reflection."

This arrangement and division of the secondary laws appears to me to be faulty in many respects. In the first place, several of the circumstances enumerated as forming separate laws are not distinct classes, but seem to be necessarily involved in others previously mentioned. Thus the *frequency* of the original perception cannot but be tantamount in its suggestive influence to the *duration* of it; for when we have more frequently renewed our perception of a certain object, it is evident that we must have attended to it for a greater length of time. While, according to Doctor Brown's own showing, the *purity* of our perceptions is a necessary consequence of their *liveliness;* for he says, in explaining the phenomena of attention, that "it may be regarded as a general law of our perceptions, that when many sensations co-exist, each individually is less vivid than if it existed alone," and "that when any one becomes more intense, the rest fade in proportion." So that it follows from the above, that the *purity* of a perception is a natural result of its *liveliness*, and *vice versâ*. Hence the secondary laws arising from the circumstances attendant upon the original perceptions of the ideas suggested are the liveliness—the duration—and the recency of those perceptions.

Nor are the laws which are made to proceed from the peculiarities of the individual to whom the ideas are suggested less imperfect in this respect; for it is evident that the modifying influence which the Doctor ascribes to the *bodily constitution*, must proceed from the same cause as that which he refers to changes produced in the *state of the body:* the one being but the *general* and the other the *particular* physical state of the individual; for if the cheerful ideas which attend a person of lively disposition be the result of his *ordinary* bodily constitution, surely the gloomy thoughts which may possess him

as it produced a more lively impression upon our minds; or it is more susceptible of suggestion, according as our attention to the subject of it was originally of greater duration; or else it is more suggestible, according as our attention to the subject of it was more recent than to that of others. The impressiveness of a subject, or—to speak more correctly—the suggestibility of an idea, then, depends upon the liveliness—the duration—or the recency of the attention devoted to the original perception. Let us now endeavour to discover which of these three circumstances is the most simple and effective as a means of impressing the matter taught.

during sickness, can but be the result of his bodily constitution *for the time being*. So that the secondary laws arising from the peculiarities of the individual to whom the ideas are suggested, are properly the bodily constitution—the temporary emotions—and the habits of that individual.

These, however, far from being *secondary* laws, seem to be even more *primitive* in their suggestive influence than those which Dr. B. has denominated the *primary*: for they are not only the *origin*, but the *directors* of the different trains of thought in different individuals; whereas, those which he has designated the primary, are but the *links*, as it were, by which the several ideas in those trains are bound together.

Hence it appears, that the more correct and scientific arrangement of the laws of simple suggestion would be as follows:—

THE PRIMARY LAWS OF SUGGESTION, or circumstances, which give *a different current or direction* to the ideas suggested by particular subjects to different individuals, are—

THE BODILY CONSTITUTION, including the *temperament*, or powers of attention and susceptibility of excitement; *the disposition*, or general temper; *the humour*, or temper for the time being.
THE TEMPORARY EMOTIONS, including *the passions*, *tastes*, and *desires*;
and
THE HABITS, including the usual mode of thinking *by certain relations*, as well as *upon certain subjects*.
} Of the INDIVIDUAL to whom the ideas are suggested.

THE SECONDARY LAWS OF SUGGESTION, or circumstances by which each idea *is related to*, and suggests that which immediately succeeds it, are—

THE ASSOCIATION, in *time* or in *place*.
THE RESEMBLANCE,
and
THE CONTRAST.
} Of the OBJECTS of the ideas suggested.

THE TERTIARY LAWS OF SUGGESTION, or circumstances by which certain ideas acquire *a greater tendency* than others to be suggested in accordance with the Secondary Laws, are

THE LIVELINESS,
THE DURATION,
and
THE RECENCY.
} Of the ORIGINAL PERCEPTIONS of the ideas suggested.

The phenomena of relative suggestion are reduced, by Dr. Brown, to two orders—those of co-existence and succession.

THE RELATIONS OF CO-EXISTENCE are—

1st. POSITION ..... "Thus," says Dr. B. "I look at a number of men as they stand together; I remark one, and I observe who is next to him, who second, and who third."

2nd. RESEMBLANCE ..... "I look at a portrait, and feel the resemblance that it bears to some well-known face."

3rd. PROPORTION ..... "I think of the vertical angles formed by two straight lines, which cut one another; of the pairs of numbers four and sixteen, five and twenty."

4th. DEGREE ..... "I hear one voice, and then a voice which is louder; I take up some flowers and smell, first one and then another, more or less fragrant."

5th. COMPREHENSION ..... "I consider a house and its different apartments; a tree and its branches, and stem and foliage; a horse and its limbs, and trunk, and head."

CHAPTER XXXIII.

OF RECENCY OF ATTENTION AS A MEANS OF IMPRESSING THE MATTER TAUGHT.

THAT we recollect a certain truth or fact, more or less readily, according as our perception of it has been more or less recent, without any regard to the duration or liveliness of that attention, must be evident to all. An object or occurrence which at the time of its perception made but little impression upon us, and to which we paid but little attention, may be remembered by us for a short time; but it is utterly impossible, in such a case, that it should remain long in the mind. We may, therefore, conclude that mere recency of attention to a particular object, is, *per se*, wholly ineffective as a means of giving permanence to our knowledge of it.

CHAPTER XXXIV.

OF DURATION OF ATTENTION AS A MEANS OF IMPRESSING THE MATTER TAUGHT.

THAT those things, to the contemplation of which we have devoted some considerable time, whether continuously or at different periods, are capable of being recalled with more or less facility, according to the duration of our contemplation, without any

THE RELATIONS OF SUCCESSION are—

1st. NECESSARY ANTECEDENCE AND CONSEQUENCE, or Cause and Effect. "When I look, for example, at a picture of Titian's, and the conception of the painter instantly arises, I do not think of Titian merely as an individual unconnected with the object which I perceive. If I had only the conception of Titian, as I may have conceived in other cases, it would be truly a simple suggestion; but this simple conception of the artist is instantly followed by another feeling of his connexion with that particular work of his art which is before my eyes."

2nd. CASUAL ANTECEDENCE AND CONSEQUENCE, or mere Priority and Subsequence. "Thus I think of the plague and the great fire of London; and I feel the one to have been prior, and the other subsequent, in occurrence."

But this classification of the phenomena of relative suggestion appears to me to be as imperfect and objectionable as that of the phenomena of simple suggestion. To enumerate the reasons for my objections would not only require more space and time than I can now devote to it, but be wholly out of character with the object of the present treatise. I purpose, however, at some future period, giving the subject a long and serious consideration; for I know no work which could throw greater light upon our mental constitution than a full and minute account of the laws of suggestion, simple and relative. They appear to me to be as important to the operations of the mind, as those of gravitation are to the operations of matter. Indeed, I can hardly express the surprise I felt on finding that Dr. Abercrombie, in his book on the Intellectual Powers (the most recent work connected with mental philosophy with which I am acquainted), had neglected to give the least account of them. It seemed like writing a treatise on chemistry, and omitting to mention the phenomena of chemical affinity—on which the whole science depends. The laws of suggestion are simply the affinities of thoughts—the attraction of aggregation and combination, between our different ideas.

regard to the recency or liveliness of our attention to them, requires little consideration to perceive. The lines which we have gone over, so frequently as to have become at length acquainted with the order of succession among the words of which they are composed, are capable of being repeated by us, long after, even though we have not attended to them more recently, and though they produced upon us, in the first instance, no lively or pleasing impression. Duration of attention to a subject is, then, it seems, one very effective means of fixing a knowledge of it in the mind. This, therefore, apparently, should be a very important instrument in the art of education. In connexion with other principles it is so; but, *per se*, it is far from beneficial. In the first place, as I have before explained, the mere fact of attending, for a continuous length of time, to the same subject, cannot but be irksome and painful, even to those of a calm, sedate, and contemplative turn of mind; while to those who, *from the temperament peculiar to their tender age, must naturally be volatile, restless, and exciteable*, it is evident that this duration of attention to one subject must necessarily be a matter of such extreme weariness and hardship, as to be capable of being induced only by resorting to cruelty. While in the second place the very time expended in the duration of the attention, and the little that can consequently be learnt, even in a long course of teaching—as well as the slow and tedious process of education by such means—renders this mode of impressing the matter taught highly objectionable as an instrument of instruction. *I hardly need add, that this is the mode pursued in the generality of our schools of the present day.*

CHAPTER XXXV.

OF LIVELINESS OF ATTENTION AS A MEANS OF IMPRESSING THE MATTER TAUGHT.

We now come to the consideration of the third and last class of circumstances which render certain ideas more suggestible than others, viz., the intensity of the attention originally devoted to the objects of those ideas; or, what is the same, the liveliness of the impression produced by them upon the mind. That we remember those things the more readily which have produced a more lively impression upon us, without any regard to the recency or duration of our attention to them, cannot certainly admit of a doubt. We recollect for a whole lifetime the great occasions of joy and sorrow. The fairy tales which are read with so much wonder and delight in the nursery, are retained in the mind, long after the duller task, which was the object of a more recent and protracted attention at school, has been effaced. Indeed, it is only the remembrance of the lively impression produced by certain objects upon the mind, that gives, as I have explained in Chapter XI., particular characters to particular persons. Had the pleasures and pains attached to different objects been forgotten as soon as experienced, there could have been no desires, and no fears, and, consequently, little or no morality or prudence amongst us. It is, moreover, the liveliness of impression produced by certain objects upon certain minds—the intensity of the attention devoted by particular persons to particular things—that gives to these persons what is commonly called a quickness of perception concerning those things. According as we attend to one object more intently than to others, so does our perception of the other objects become more dim and indistinct. It is this intensity of attention to one thing, and the consequent fading of all others, that produces the state of mind termed *reverie*, so peculiar to lovers and persons of contemplative habits. While, according as certain objects fade, so does our perception of those which remain become more vivid and alert. As the light of the sun declines, so do the stars grow visible; and the same sound which is scarcely heard in the tumult of the day is capable of affecting us, even powerfully, if it recur in the dead of the night. But the liveliness of impression produced upon us by certain things not only quickens our perception of them, but it also renders our attention to them of greater duration; and thus gives, as it were, a double permanence to our knowledge of those things. The feeling of beauty which the perception of certain objects induces in us, disposes us, as I said before, to dwell upon, or attend to them, longer than others, and consequently to strengthen our remembrance of those objects.

It must, then, I think, be evident that, *of all the means of fixing knowledge in the mind, liveliness of impression is at once the most simple, effective, and natural. And yet in what school is this mode even attempted to be pursued?* A boy is commonly taught to remember his task by that most artificial as well as cruel of all means—mere duration of attention to it. *This is at war with his very nature;* and we have consequently been forced to invent birches, canes, and like instruments of torture, to compel him to do that which is in direct opposition to the principles of his physical as well as mental constitution. *Indeed, the feeling of langour which the wise and benevolent Designer of the mind has instituted as the necessary result of this duration of attention to any one subject, and of which he has rendered us more susceptible in childhood than at any other period of life, is a most convincing proof of the impropriety of that mode of instruction; while the greater exciteability which he has given to us in youth, and, consequently, the greater susceptibility of lively impressions at that age, is an assurance equally strong of the fitness and rectitude of this principle as a means of education.*

Let us, therefore, endeavour to discover how this liveliness of impression from certain objects is to be produced.

CHAPTER XXXVI.

OF THE MEANS OF PRODUCING LIVELINESS OF IMPRESSION.

THIS, it needs no logic to prove, may be effected by connecting the perception of the object with *some emotion* in the mind.* For that it is the peculiar nature of our emotions of every sort to render more lively all the mental states with which they are combined (as if their own vivacity were in some measure divided with these), every one must have experienced. The eye has, as it were, a double quickness to perceive what we love or hate—what we hope or fear. Whose ear so quick as the mother's in detecting the cry of her infant? Now, this connexion of the object to be taught or impressed upon the mind, with some emotion in the pupil, is a necessary part of the system I have proposed. It will, doubtlessly, be remembered, that I showed, when treating of the mode of inducing curiosity, that we could create in the scholar a desire to know that which we desire to teach, only by causing the subject to excite his surprise and wonder; and this excitement of the emotions of surprise and wonder, in combination with a particular object, must, it is evident, necessarily tend, not only to arrest the attention, to stimulate the curiosity and to quicken the perception, but also to impress or fix the various circumstances connected with the perception of that object upon the memory of the pupil. That we attend to, and remember the *extraordinary* longer than the *ordinary* occurrences of life, certainly requires no argument to prove. The Irish

* The circumstances which regulate the liveliness of our impressions have not, to the best of my belief, been classified by any writer upon mental science. They constitute what may be called *the laws of perception*, and seem to be no less important than the laws of suggestion, for arriving at that knowledge of mental causes and effects which forms what may be termed *practical metaphysics*—in contradistinction to that more speculative branch of the science which is devoted to vague and fruitless disquisitions upon the substance and essence of the mind—rather than—what alone can be profitable—the exposition of the circumstances which induce, control, succeed, and distinguish its different states.

THE LAWS OF PERCEPTION, *or circumstances which regulate the liveliness of our impressions, appear to be of three kinds, according as they are referable to some associate sensation—conception—or emotion.*

The circumstances regulating the liveliness of our impressions, which are *referable to some associate sensation*, are—

The contrast of the sensation to that which immediately preceded it. Thus white is more conspicuous in connexion with black; cold more intense after heat; and an acid rendered doubly piquant when preceded by an alkali.

The novelty of the sensation. A person coming for the first time among the bustle and confusion of a city is almost stunned by the noise; he soon, however, "grows accustomed to it," as we say; and ultimately becomes scarcely sensible of that which at first nearly overpowered him.

The purity of the sensation. "When many sensations co-exist," says Dr. Brown, "each individually is less vivid than if it existed alone. The same sound, which is scarcely heard in the tumult of the day, is capable of affecting us powerfully if it recur in the dead of the night."

These three circumstances may, however, be considered as so many different results of one more general law, viz., that *our sensations are less or more lively, according as they are similar or different to those that preceded them.*

The circumstances regulating the liveliness of our impressions, which are *referable to some associate conception*, are—

The disappointment of our expectations, or the difference of the object perceived from what we had confidently expected. Thus, if a person, ignorant of all chemistry, were promised, by one on whose veracity he placed the firmest reliance, to be shown a piece of charcoal worth several hundred pounds, and then had a moderately sized diamond exhibited to him, it is clear that the total difference of the object in its appearance to what he had previously conceived, could not fail to make it produce a more lively impression upon him than it otherwise would.

The extraordinary circumstances in which the object is perceived, or its perception at a time when, or in a situation where, we would not naturally have expected it. The stranger's foot-print on the sand is properly described as producing a lively impression upon Robinson Crusoe; because, believing his island to be uninhabited, it was something which, in his situation, he would not naturally have expected.

The singularity of the object, or its difference from anything that we remember to have heard of or perceived. The kangaroo, on its discovery in New South Wales, and first introduction into this country, produced a very lively impression upon all beholders, on account of its singular nature and habits, and its great difference in these respects from any other animal with which they were previously acquainted.

These three circumstances, however, may also be considered as so many different results of one more general law, viz., that *our perceptions are less or more vivid, according as their objects agree or are at variance with our previous conceptions.*

The circumstances regulating the liveliness of our impressions, which are *referable to some associate emotion*, are—

The interest felt in the subject to which the object of perception belongs, or its relation to something which has previously excited some emotion in the mind. Thus, on visiting the retreats which inspired the genius of our favourite authors, the different objects which we perceive produce a more lively impression upon us than they otherwise would, because they are connected with those whose works are associated in the mind with a feeling of intense delight. In the same manner the weapon used in the perpetration of some savage crime becomes a more lively object of perception than other instruments of the same kind, on account of the horror and indignation excited by the act.

The sentiments inspired by the object perceived, or the feelings of delight or disgust, sympathy or antipathy, which the perception of it excites in the beholder. The features which command our admiration, or the acts which excite our abhorrence, produce a livelier impression upon our minds than those which we contemplate with perfect indifference.

The hopes or fears excited by the perception of the object, or the connexion which it appears to the beholder to have with his future happiness or misery. The ship in the distance to the poor wretch upon the raft—the letters which, to the jealous, seem to confirm their worst suspicions, are objects which become impressed upon the mind with intense liveliness.

These three circumstances may, however, also be considered as so many different results of one more general law, viz., that *our perceptions are more or less lively, according as their objects are connected, or not, with some past or present emotion;* and which law may again be viewed as a modification of that still more extensive principle of our constitution, *by which the greater vivacity of any one of our states of mind increases the liveliness of those which immediately succeed and harmonize with it.* Thus, "perceptible objects give a brighter colouring, as it were"—(to use the words of Dugald Stewart)—"to the thoughts and emotions which they excite in us;" because our perceptions are naturally more vivid than our conceptions, and consequently give a greater vivacity to the thoughts and emotions of which they are the causes or suggestors.

giant—the great comet—the Siamese twins—the hard frost—the living skeleton—Daniel Lambert—Miss Biffin—the infant calculator—the learned pig—*and such like prodigies, are recollected by all*; and they are so *merely* from the surprise or wonder they originally excited in us.

If, however, there be any other emotion connected with the surprise, the circumstance or object which gave rise to it cannot but become additionally impressive. Thus we remember the *extraordinary occasions of joy and sorrow* more vividly than the other events of our life; not only from the extraordinary character of those occasions, but also from the joy and sorrow which originally accompanied them. Who that has read Robinson Crusoe (as an intelligent friend of mine remarked) has ever forgotten the foot-print on the sand? and who that has looked into English history, does not remember the great fire of London—the prevalence of the plague—the execution of King Charles—and such like events? Indeed, if we look into our own minds, and examine the process of memory, we shall find that the great occasions of joy or sorrow are, as it were, the different milestones by which we reckon our journey through life; and that we recollect the less striking events only according as they were originally associated with them in time or in place. I think we may, therefore, safely conclude that the feeling of surprise excited by the perception of any extraordinary object necessarily tends to impress the idea of that object upon the mind, and, consequently, to give the idea of it a greater susceptibility of being suggested; and that, if the perception of the object be made to excite some other emotion in connexion with that of surprise, then the idea of that object necessarily becomes more deeply impressed upon the mind; and, consequently, still more ready to be suggested or recalled at a future time. Now these two principles are necessary parts of the system I have propounded. I have said, that we are not only to make the object, of which we wish to give the pupil a knowledge, call forth his surprise and wonder, and consequently his curiosity, but that having roused his curiosity, we should proceed to gratify it, by pointing out to him the circumstances or qualities in which that object agrees with others; and so produce in him that feeling of vivid delight or beauty, which necessarily attends the perception of any novel agreement. Thus it is evident, from the principles above stated, that the knowledge of the object obtained by any such means cannot but be rendered permanent, and indelibly impressed upon the mind.

CHAPTER XXXVII.

OF THE INFLUENCE OF PERCEPTIBLE OBJECTS IN GIVING GREATER LIVELINESS TO OUR IMPRESSIONS.

THERE is still one other circumstance which modifies the liveliness of our impressions, and on which the durability of our remembrance of them consequently depends;—that is the perceptibility of the objects from which those impressions proceed. We recollect those things which we have seen much longer than those of which we have only heard or read; and that from the very simple fact that our sensations are naturally of a more lively and vivid character than our conceptions. But our sensations are not only more lively themselves than our conceptions, but they also give greater liveliness to the thoughts which are connected with them; and so tend to impress those thoughts more firmly on the mind. "Thus," it has been truly said, that "to a woman of lively sensibility, who, after many years of happy wedlock, has been deprived of the father of her children, and who has learned at length that sort of tender resignation which time alone inspires, so as to think of his memory, not, indeed, without sorrow, but with a sort of tranquil sadness—to such a person, the discovery of a lock of hair—a letter—a book—a drawing—or any other trifling and unexpected memorial, is sufficient to fill the eyes with instant and overwhelming emotion." "The influence of perceptible objects," says Dugald Stewart, "in giving a brighter colouring, as it were, to the thoughts and feelings which they excite in us, is very remarkable. After time has in some degree reconciled us to the death of a friend, how wonderfully are we affected the first time we enter the house where he lived! Everything we see—the apartment where he studied—the chair upon which he sat—recall to us the happiness we have enjoyed together; and we should feel it a sort of violation of that respect we owe to his memory to engage, when such objects were before us, in any light or indifferent discourse. "In the case, too," continues this high authority; "in the case of those remarkable scenes, which interest the curiosity, from the memorable persons or transactions which we have been accustomed to connect with them, in the course of our studies, the fancy is more awakened by the actual perception of the scene itself than by the mere conception or imagination of it. Hence the pleasure we enjoy in visiting classical ground—in beholding the retreats which inspired the genius of our favourite authors—or the fields which have been dignified by the exertions of heroic virtue." "Whilst we were at dinner," says Captain King, in the account of his travels, "in a miserable hut, the guest of a people with whose existence we had before been scarcely acquainted, and at the extremity of the habitable globe, we discovered a solitary half-worn pewter spoon whose shape was familiar to us, and which, on examination, we found to be stamped on the back with the word '*London*.' I cannot pass over this circumstance in silence," he adds, "out of gratitude for the many pleasant thoughts—the anxious hopes—and tender remembrances that it excited in us. Those who have experienced the effects that long absence and extreme distance from their native country produce on the mind, will readily conceive the pleasure such a trifling incident can give."

Perceptible objects, then, it appears, do give greater liveliness to the thoughts and feelings which they suggest; and consequently cannot but tend, when made to excite our surprise, not only to give increased vividness to it, and so to arrest the attention—to stimulate the curiosity—and quicken the perception of the observer in a higher degree, but also to impress the different ideas connected with those objects more deeply upon the mind; and therefore to give a greater permanence, as well as distinctness, to our knowledge of them.

Hence, in a right system of education, we should, when possible, teach only by means of perceptible objects—that is, *practically;* and that it is possible to do so in most—if not in all—of the branches of knowledge which, I have said, should constitute the subject matter of education, the slightest consideration will enable us to perceive. Natural philosophy takes cognizance only of those things which come under the notice of our senses; and this is, therefore, the only true mode of teaching that class of science. Mental philosophy, however, is generally of a more abstract character: the principal objects of its consideration are—as I have explained in chapter X.—the relation and order of succession among the different thoughts and feelings within us; and these, of course, we cannot convert into objects of perception. The inculcation of this branch of science consequently should, I think, be deferred until such time as the pupil, by the continual exercise of his intelligence upon more definite subjects, has felt the delight, and so acquired a habit and taste for seeking and perceiving the more abstruse agreements of things. Those intellectual arts, however—such as music—painting—and the like—which are only so many branches of mental science, or means of producing a feeling of beauty in the mind, are not liable to this objection. They relate as exclusively as natural philosophy to perceptible things; and should, therefore, be included among the subjects of early education. Moral philosophy admits also of sensible evidence. Its object—as I pointed out in chapter XI.—is to give us a knowledge of the effects produced by our different acts upon the feelings, both of ourselves and others: and such knowledge, it is evident, can but be impressed more firmly and deeply upon the mind when made to be the result of actual experience. It is the *dogmatical* method we adopt of inculcating this most important branch of science, that renders our present system of moral education, in most instances, so lamentably futile. We teach the beauty of goodness by *precepts:* whereas, to do so effectively, we should teach it by *practice.* Let a child be induced to *act* in conformity with the Christian doctrines, and so be made to *feel* the happiness and love which invariably attend the practise of them, and there can be but little fear of his failing to make them his general principles of action at a more advanced period of life. But *preach* them to him only—*tell* him that he *should*—he *ought*—it is his *duty* to do as they say—and you cannot but render that which is the only true means of happiness to Man in this world (to say nothing of that which is to come) almost, if not entirely, null and void—a mere catalogue of *arbitrary dogmas*, instead of a collection of *infallible truths;* and the being, who has thus become acquainted with the *mere mode of expressing those truths*, the callous spouter of Christian precepts, rather than the faithful performer of Christian acts.

CHAPTER XXXVIII.

SUMMARY OF THE PROPOSED SYSTEM OF EDUCATION.

THIS, then, constitutes my plan of education. I have taken for my guide in framing it the laws of the mind; and, if I be right in my notion of these laws, it is clear that the plan which I have proposed can be the only true and correct mode of educing the powers and propensities of human nature—which is manifestly the sole meaning of the term education. I have first shown that a knowledge of the principles of the material, mental, and moral universe, is all that constitutes real knowledge, and all that leads directly to happiness; and that these, therefore, should constitute the *subjects* of education. Secondly, that the *mode* of education, or means of imparting a knowledge of these subjects, should consist in bringing before the pupil all the most extraordinary circumstances connected with the particular fact or truth which the teacher desires to communicate—leading him to expect a certain result, which is in conformity with his limited experience—producing some other result, which is in direct opposition to that experience—thereby exciting his surprise and wonder, together with his curiosity—and thus creating in him a desire to learn that which the tutor desires to teach. Thirdly, that, having stimulated his curiosity, we should proceed to gratify it, by pointing out to him the agreements and differences upon which a knowledge of the subject necessarily depends, and so producing in his mind that feeling of beauty or vivid delight which invariably attends the perception of any novel agreement. And, lastly, that we should, in order to give a greater liveliness to the impression of the subject, teach by means of perceptible objects, when *possible*—as in natural and moral philosophy, as well as those branches of mental science which are commonly termed the Fine Arts—and, when *impossible*—as in the more abstract parts of that science—that we should defer all instruction upon such subjects until the volatile temperament peculiar to childhood should have subsided, in a measure, into the more sedate and contemplative disposition of maturer years; and the pupil, by the continual exercise of his intelligence upon more definite objects, as well as by experiencing the delight consequent upon the exercise of it, shall have acquired a habit and taste for attending to the more abstruse agreements of things.

The above method, it will be perceived, differs

from that at present pursued; in so much as it purposes, in the first place, to give the pupil a knowledge of facts and truths, instead of signs and words—of nature, instead of books; in the second, to create in him a desire to learn that which the tutor desires to teach, instead of compelling him to do so by the dread of the birch; in the third, to make study and contemplation a source of intense delight, instead of being as now a cause of extreme suffering to the student; and in the fourth and last place, it purposes to make this knowledge the result of actual experience, instead of mere reading—or, to sum up the whole system in a few words, Nature is to be the book—the World the school-room—Experience the tutor—Wonder the incitement—and Beauty the reward.

CHAPTER XXXIX.

RETURN TO THE CONSIDERATION OF THE RELATION OF READING AND WRITING TO EDUCATION.

HAVING at length fully established the meaning of the term education, I now return to the consideration of the relation between it and reading and writing.

Reading and writing, then, as I have shown in Chapter II., are simply a means—like speech—for communicating our thoughts and feelings to others, or for the communication of others' thoughts and feelings to us; but a means by which—unlike speech—those thoughts and feelings can be transmitted to any distance in space, or preserved for any period in time. Writing, as I then explained, always regards the future; reading respects the past; whereas speaking is restricted in its operations to the present. They are these prospective and retrospective properties of reading and writing, which give rise to the chief benefits resulting from a knowledge of these arts, and which constitute the main distinction between them and speaking. All that is communicable by literary means admits, therefore, I concluded, of being as well—if not more forcibly—conveyed by word of mouth—provided the parties be not far removed from each other. Proximity, I added, it should be remembered, is all that is essential in this respect, for the prosecution of oral intercourse; and when that condition can be complied with, it surely must be absurdly idle to have recourse to a means of communication, which is of use only in precisely opposite circumstances. Education, I have also shown, is literally the act of educing and expanding those intellectual and moral capacities, which constitute the chief characteristics of Man's nature. Now, that the tutor, in order to do this properly and effectually, should be proximate or in close communion with the pupil, certainly cannot admit of a doubt; and if the tutor be thus proximate or in close communion with the pupil, then, as I said before, it is absurdly idle to have recourse to a means of education like reading and writing, which is of use only in precisely opposite circumstances. The real and natural means of education is experience; and it is the duty of the master to give the pupil this experience, by bringing before him those things and events which it is absolutely necessary for him to know, and pointing out to him the circumstances or qualities in which they agree or differ with others. This constitutes real education—that is, the fact of being educated by another. Whereas, to teach reading and writing, is to teach only the means of educating one's-self. Here lies the sole relation between these arts and education—namely, as being the means of self-instruction. And it is from the fact that we give the pupil a knowledge of little else than reading and writing in our schools of the present day, and so turn him upon the world, *destitute of all* PRINCIPLE—*intellectual as well as moral—leaving the* REAL EDUCATION *of the being* ENTIRELY *to himself*—that the *instruction* now given is so often a curse, rather than a blessing, both to the individual and society at large.* To teach a person all that is known, and to implant in him such a spirit of inquiry as shall make him seek to increase the knowledge, respecting the order and harmony of the beautiful world without him, and also of the still more beautiful world of thought and feeling within him, is, or—as I said in Chapter VII.—rather should be, the great aim and end of all education. And, having given the pupil this knowledge, and implanted in him this spirit, we are then to add a knowledge of reading—so that he may be able to trace the history and progress of it, which is extremely curious and interesting—and of writing—so that he may be able (should he have it in his power, by any new discovery, to increase the general knowledge) to give that discovery to the world. We must recollect that, educationally considered, writing is the means of educating those who are absent and future—reading, the means of being educated by those who are absent and past—and speaking, the means of educating those who are present.

Of the present system of education, it surely must be needless for me to speak further. The reader will, doubtlessly, be able now to perceive, that in the generality—if not in all—of our schools of the present day, we exercise only the memory, to the *neglect, as well as injury*, of the intellect. This evil, by the plan here set forth, I have endeavoured to remedy. The object of the system of instruction I have proposed, is to give an individual a knowledge of Nature—Man—and God. The object of the system of instruction at present pursued, is to give an individual a knowledge of Reading—Writing—and Arithmetic. I leave it to the reader to decide between the two.

* My friend Dr. Cooke Taylor has said, as truly as wittily, that a knowledge of reading and writing is no more education than the possession of a knife and fork is a good dinner.

THE END.

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